Next Meeting, The American Association of Orthodontists, San Francisco, California, May 8 through 12, 1955. Headquarters, The Fairmont Hotel.

AMERICAN JOURNAL OF ORTHODONTICS

OFFICIAL PUBLICATION OF
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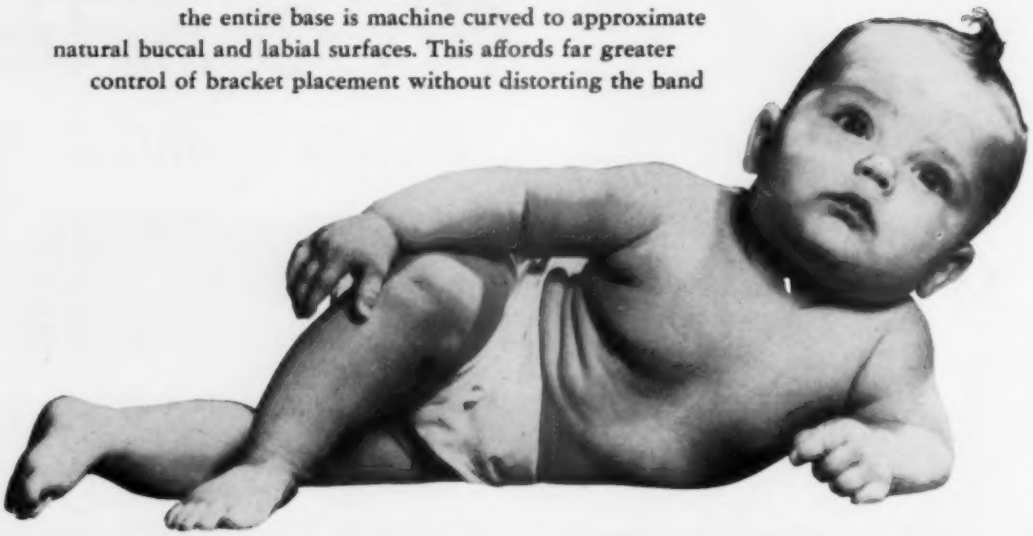

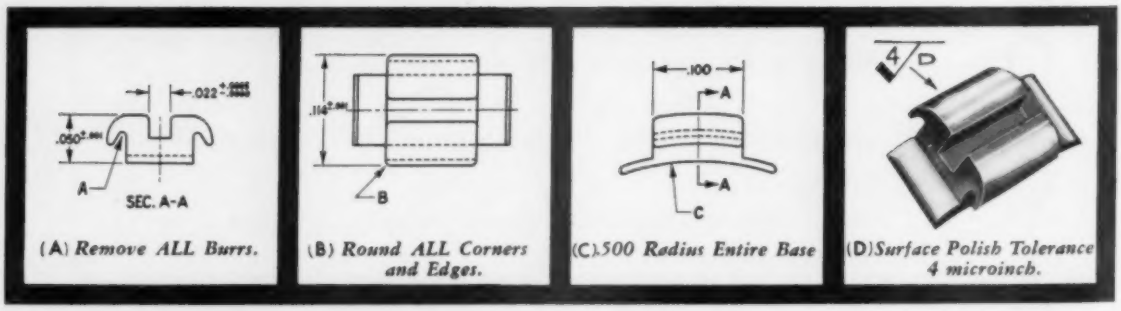

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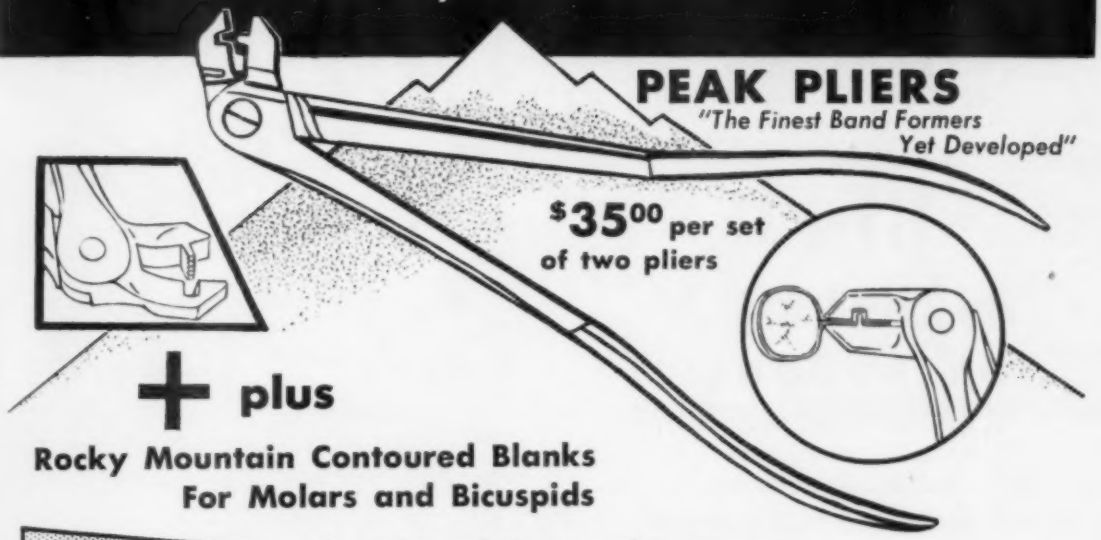

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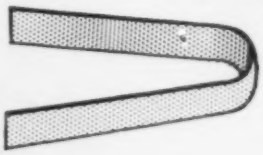

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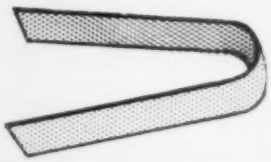

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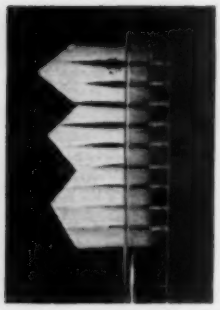

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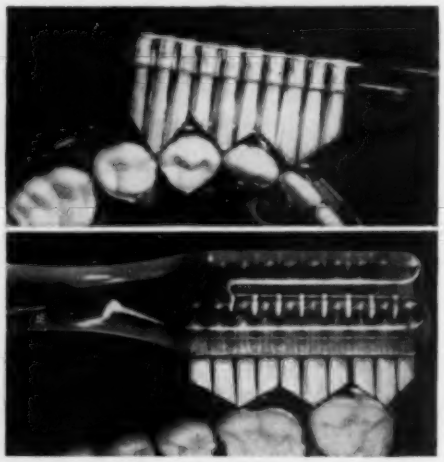

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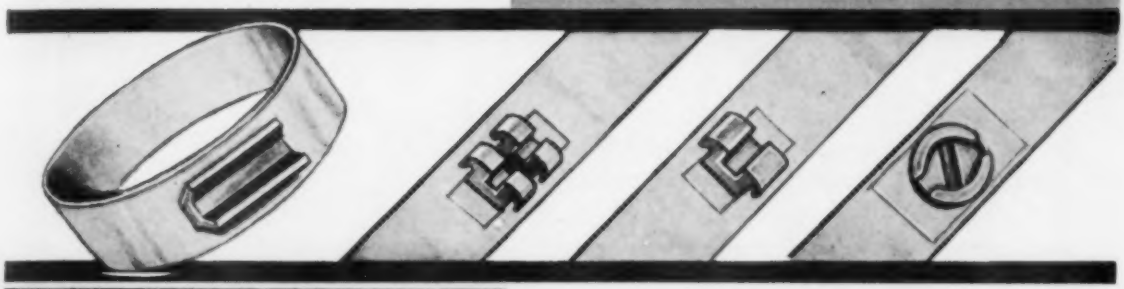

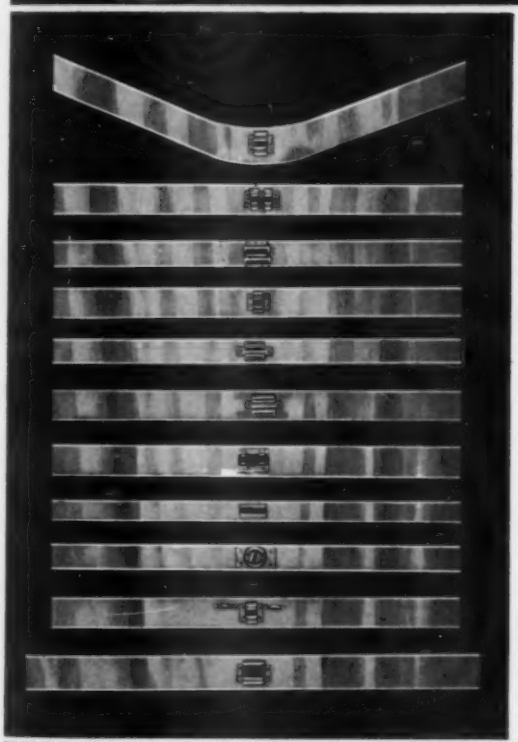

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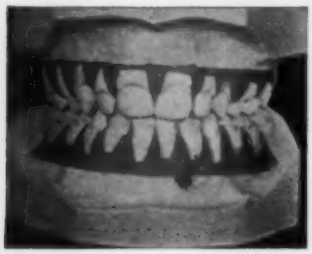

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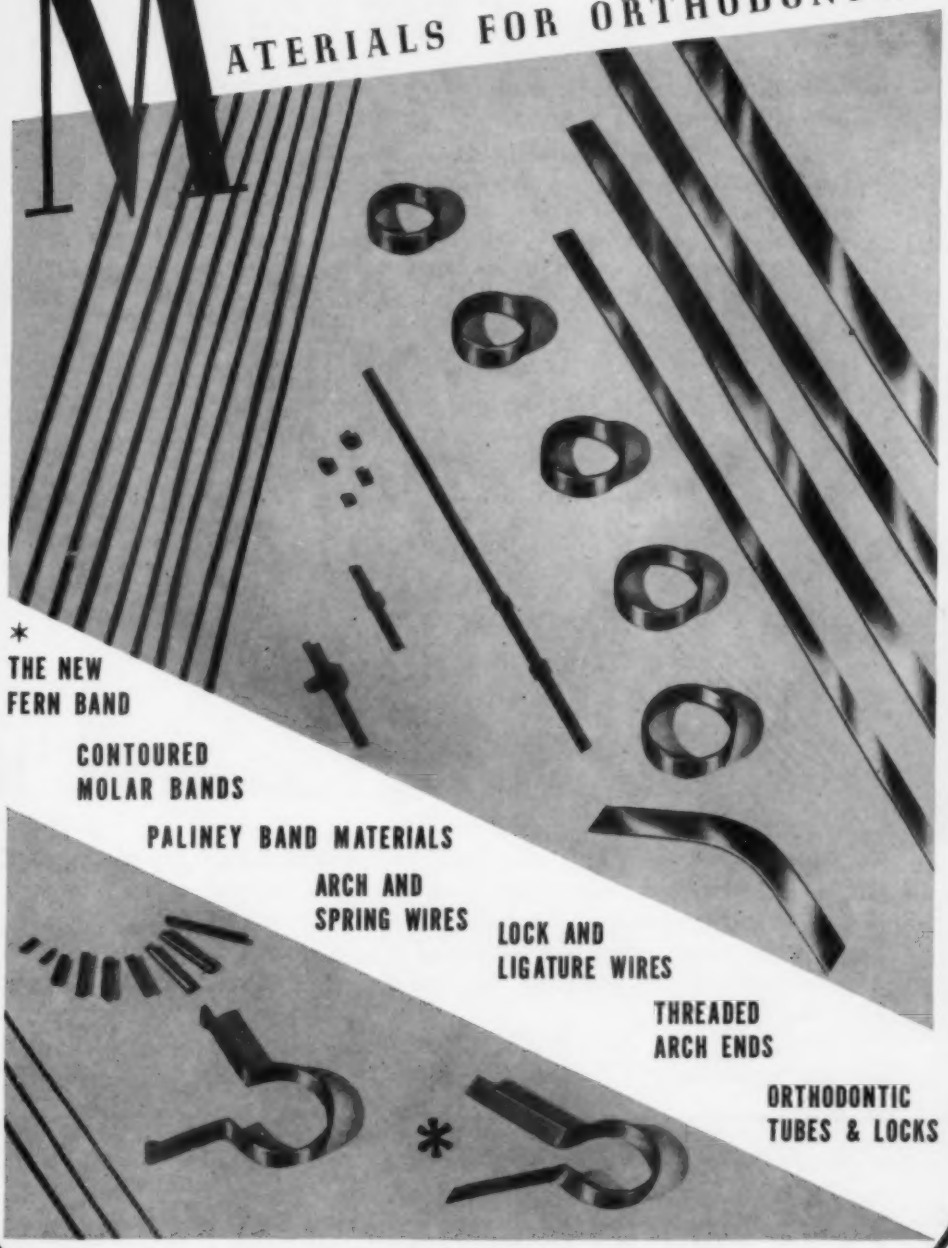

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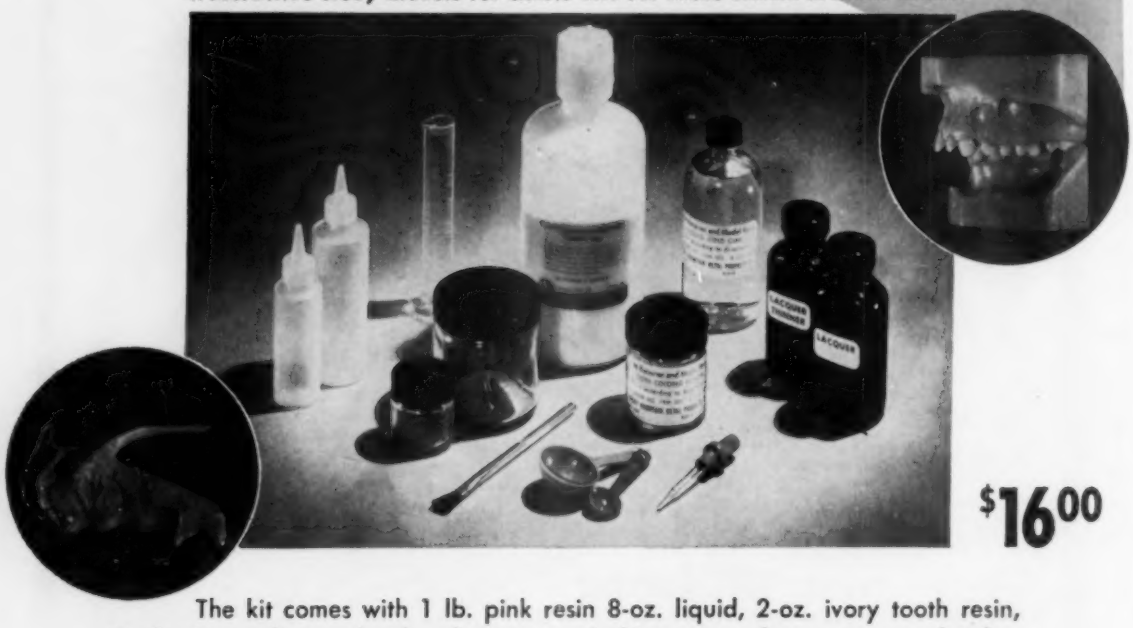

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American Journal
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VOL. 41 APRIL, 1955 NO. 4

Original Articles

PRESIDENT'S ADDRESS, AMERICAN ASSOCIATION OF ORTHODONTISTS

JAMES W. FORD, D.D.S., CHICAGO, ILL.

MEMBERS and Guests of the fiftieth scientific session of the American Association of Orthodontists, we greet you and trust that your stay with us will be most enjoyable and profitable.

You will recall that we celebrated the fiftieth anniversary of the founding of our organization, which was first called the American Society of Orthodontists, in Louisville in 1951. Since our founding, however, we have missed some yearly scientific programs, and this is actually our fiftieth scientific session. While we are proud that this is the fiftieth anniversary session and the start of a new half-century, we are not unaware of the fact that we are just four years late of the real celebration of the beginning of orthodontics as a specialty in dentistry. It would be pleasant to dwell at length on the memory of the many colorful personalities who have taken part in the formation of our specialty and organization. Today, however, there is not sufficient time to discuss them individually. I would like to remind you of the imagination and forethought that these men had and of how they accomplished so much with so little, as compared with what the modern clinician and research worker have available today. The pioneers lacked our many diagnostic tools and depended almost solely on techniques resulting from their own experiences of trial and error. They deserve immense credit, for without the foundation they created we would

Presented before the American Association of Orthodontists, Chicago, Illinois, May 17, 1954.

not have the modern, efficient appliances we have today, nor would we have the various methods that we employ in our case analysis and diagnosis.

I would like at this time to pay tribute to the General Arrangements Committee, the Program Committee, and all the other committees for their untiring efforts in the preparation of this meeting. It has been a most gratifying satisfaction to observe the workings of these men. The chairmen and members of the various committees have performed their duties most unselfishly. To each and every one of them we express our greatest thanks.

Our great friends, the commercial exhibitors, have aided greatly in the promotion of this meeting. We trust that all of you will pay each of them a visit in appreciation of their generous cooperation.

I would like to call to your attention the fine, well-organized group we have and how well it functions. Since the reorganization of the American Association of Orthodontists, there now are eight various components. Each component conducts its executive business in an exact and orderly manner and has one scientific session each year, with the exception of the Northeastern Society of Orthodontists which has both spring and fall meetings. They all have good, representative orthodontic programs.

The fact might be mentioned that one of the greatest contributions of the component societies is that they afford the younger men more opportunity to become interested in organized orthodontics. It is always a pleasure to see the recent orthodontic graduate making his application to join his component society. He should do so, and should be encouraged to do so, as soon as he is eligible. Mutual progress for himself and the parent body will crystallize earlier and better by his affiliation.

It is not the intent in this presentation to rehearse or attempt to give you a report of the workings of all the various committees. This will be published subsequent to this meeting for your information, and I would urge you to follow it for your own interest in order to keep abreast with the mechanics of your fine organization. I would like, however, to touch briefly on some of the more important affairs which have transpired during the past year.

One of the busiest and most able men of our organization is Dr. Pollock, editor of our JOURNAL, whom I consider our outstanding representative. If you have not already done so, I suggest that you review his editorial, "Orthodontic Trends—Past and Present," in the April issue of the AMERICAN JOURNAL OF ORTHODONTICS. In addition to the assistance of the Publication and Editorial Board, with Joseph D. Eby as chairman, and of our sectional editors, he has had valuable assistance this year for the first time from Earl E. Shepard and J. A. Salzmann, as assistant editors. We want to thank and commend them for their conscientious assistance.

Our Public Health Committee, of which J. A. Salzmann is chairman, has a big undertaking before it. Orthodontic treatment is no longer looked upon as purely a luxury, but now is considered an indispensable measure in attaining the proper physical health and mental well-being of many children, as well as adults. The word *orthodontist* no longer leaves the listener or reader of our

modern society with a mental question mark as to its meaning. Along with this thought, according to the United States Department of Commerce Bureau of Census, it has been estimated that in the next six years there will be an increase of approximately four million children in the 10- to 14-year age group in the United States. Approximately three million children during the same period of time will move up into the 15- to 19-year age group.

No doubt many of you have read the article published recently in *Good Housekeeping* under the title, "Why Does Orthodontic Treatment Cost so Much?" This article has proved, and will prove, to be of valuable assistance in clarifying a general understanding of the approach, practical management, and consummation of treatment for all concerned. The orthodontists of the City and State of New York have pioneered, through their health departments, the consideration of orthodontic treatment for the underprivileged, apparently with successful results in state financial aid. This plan assures reputable treatment of patients and general approval of orthodontics by the public. Other states with relative and similar plans are California, Colorado, and New Jersey. It will be interesting to follow the progress and advice of this committee at this meeting.

I want to present to you now another progressive report of the Oral Hygiene Committee of Greater New York. This committee procured radio time over station WNYC each Tuesday morning at 10:30 during the month of April and presented the following subjects: "Dental X-Rays for the Children," "Fillings That Save Your Teeth," "Good Dental Health Habits," and "How Organized Dentistry Helps You." All these subjects are related to preventive orthodontics, and this committee is performing a splendid service. A similar plan is in the making for the Midwest. The new educational TV station, Channel 11, which is being completed in Chicago, should be an excellent means of disseminating health education material. The Chicago Dental Society and other health groups have contributed liberally for its promotion.

The Public Relations Committee, with Fred R. Aldrich as chairman, will have a detailed report to give before the Board. It is a pleasant thought that the work of this committee has not been as trying as that of last year.

I now want to refer to the highest tribunal of our Association, the American Board of Orthodontics. As you know, it was conceived by our pioneer member, Albert H. Ketcham. Ours was the second of any of the professions to have certifying boards, and the first among the dental specialties. Dr. Ketcham was inspired by the progress of our great specialty and, as a man of vision and understanding, helped institute the American Board of Orthodontics, thereby aiding immeasurably in raising the standards to the high plane that our specialty enjoys. Of our total membership of 1,389 active, we now have 437 diplomates of the A.B.O. It has reached the point where there is now more or less competition among the component groups of the American Association of Orthodontists as to which has the most Board members. This is a healthy sign, and most gratifying.

The conferring of the Ketcham Award to an outstanding member for meritorious service, which usually occurs each year, is always an inspiring and satisfying ceremony. We are happy to announce that Charles R. Baker is the recipient of the award this year.

The cooperation of the diplomates at this meeting, in favoring us with the exhibit of their examinations, is greatly appreciated.

May I congratulate the president of the Board, Raymond L. Webster, for the fine work he has accomplished during the past year, and extend the best of wishes for a most successful year to follow.

You have recently received a revised copy of the Constitution and Bylaws of our Association. This has been a tremendous task, headed by Oren A. Oliver as chairman, with Leo M. Shanley and Philip E. Adams as members of his committee. Our secretary, Franklin A. Squires, also had his part in this revision and preparation, and we are grateful to each and every one of them for their generous and untiring efforts in our behalf.

Our Nomenclature Committee has functioned smoothly with vice-president George M. Anderson as chairman. B. F. Dewel, as a member of this committee, met here in Chicago in June of last year with the advisory group of the American Dental Association, and will have a comprehensive report to offer. This is an important committee and should be on the alert at all times.

A special committee on the Code of Ethics, headed by William R. Alstadt, will report to the Board, and any suggestions, recommendations, or actions taken by the Board will appear in the records.

A report will be made by Allan G. Brodie of the Education Committee. This, we expect, will be made in coordination with the report of the special committee on who is eligible to become a member of our Association. A part of the report of the Public Relations Committee should be pertinent to this discussion.

A report of the Research Committee, with John R. Thompson as chairman, speaks for itself in the supplemental program which you now have. I know it will be as stimulating to you as it was to your president to know that thirteen essays were submitted to the committee this year for consideration. The superior quality of all of them made it difficult to arrive at a final conclusion.

Another special committee, which we have mentioned, headed by John R. Thompson, will give an extensive report with particular emphasis on who is eligible to become a member of our Association. This question has been under considerable discussion for some time. With the advancement of our specialty in the methods of teaching and training, it becomes quite a controversial subject. We urge you to follow the report of this committee.

The Necrology Committee, with Scott T. Holmes as chairman, has brought out some practical ideas of realistic thinking which, when studied, leave you no time for postponement of their applications. I would refer you again to the editorial in the March issue of the JOURNAL. Dr. Pollock emphasizes the content of a guest editorial by Dr. Dillon relative to the Necrology Committee and urges

careful study of the booklet compiled by Dr. Herbert of this committee. It seems timely now to pay respect to all this year's deceased members, especially James A. Burrill, past president, and Clare K. Madden, past vice-president.

There are other matters coming before the Board which are very important, but which I shall refrain from commenting on, since they will be further condensed and reported to you.

I want to express my gratitude to the most pleasant and efficient group of officers it has been my pleasure to work with: president-elect Fred West, vice-president George Anderson, and secretary-treasurer Franklin Squires.

To the chairmen of the various committees and the members of their committees, please accept my sincere thanks and appreciation.

To the essayists and clinicians who have made this program possible, we thank you. We trust that you will feel well repaid for the generous effort you have extended for the success of our program.

To the exhibitors, thanks for the efforts you have put forth for the success of this meeting.

To the incoming officers, with Fred West as president, I want to express my best wishes for a successful administration. I know that you will have the same loyal support and cooperation which have been mine during the past year.

It has been a pleasure to serve you and to work with you, and I want you to know how sincerely I appreciate having had the privilege of being your president. Be assured it will be an honor always cherished.

55 E. WASHINGTON ST.

A PANEL ON THE TREATMENT OF THE DECIDUOUS AND MIXED DENTITIONS

LEUMAN M. WAUGH, D.D.S. (MODERATOR), NEW YORK, N. Y.

MR. PRESIDENT, FELLOW MEMBERS, LADIES, AND GENTLEMEN:

WHEN the chairman of the Program Committee suggested that I serve as "moderator," I told him that I already had too many commitments. He tactfully mentioned *deciduous dentition* as the subject and said that he would get in touch with me after his return home from the meeting in Dallas. I told him that my answer would have been "no," then, except for the topic he had suggested.

During the summer he turned on the "Bengston charm" and told me that he felt certain of being able to secure Drs. Hahn, Kloehn, and Terry to be fellow panelists. Thus, he talked me into it and here we are—from sunny California on the broad Pacific to the Isle of Manhattan on the Atlantic, and from the green pastures of Wisconsin to the waving palms, southern skies, and tall fish stories of delightful Florida.

The strongest factor in my decision to take part in this panel stems from the fact that during the past decade the orthodontic pendulum has taken an extreme swing to the left by which a surprising number of our younger members have been led to advocate, as a principle of practice, a "hands off" policy during the deciduous and mixed dentition periods. They advise waiting for treatment until the deciduous dentition has been replaced by permanent successors at about the twelfth year.

For more than four decades I have taught undergraduate and postgraduate students and have stressed to the general practitioner of dentistry that the most harmful advice that can possibly be given the parent is that of deferring orthodontic care until after all the deciduous teeth have been replaced by their permanent successors. We recognize rather generally that normal occlusion is the basis of the practice of dentistry and that the development of normal occlusion is the basis of the practice of orthodontics. The growth of the face, jaws, and teeth toward adult occlusion is an individual, progressive problem from conception to maturity. People of recent time, especially those of mixed racial ancestry, together with the many intangible influences of environment, often make orthodontic diagnosis most difficult. The early recognition of factors that predispose to malocclusion and their prompt correction we regard as essential to the maximum development of facial bones and related musculature, the jaws, teeth, and individual functional occlusion.

Read before the American Association of Orthodontists, Chicago, May 20, 1954.

Normal function is conducive to normal growth and to normal structure and, conversely, abnormal or perverted function is conducive to abnormal growth and jaw structure, tending toward malformation of face and jaws, with malpositions of erupting teeth. Principles of growth, in our experience, teach us that the earlier any perversions in growth and development are corrected, the better the prospect of preventing the need of complicated corrective orthodontic treatment later.

In all sciences there must be a norm that may be used as a standard. The only truly exact science is mathematics—two and two always make four. Chemistry is fairly exact. In the biologic studies, however, a norm or yardstick from which to reckon is equally important, but not so easily found. Much effort by researchers has served gradually to shed light. In orthodontics we are fortunate to have gleaned much from collateral science.

An outstanding contribution was made by T. Wingate Todd, professor of anatomy at Western Reserve University. He found much that can be utilized in a practical way by the orthodontist. In a paper presented at the thirty-third annual meeting of this Association, held in 1935, nineteen years ago, he stated: "The records of our long term studies on children now include standard Bolton x-ray pictures and records over a period of five years. It is perfectly possible therefore to construct norms of facial growth at any period of childhood, and it is likewise possible to study both the origin and the course of deviations from the norm."

Todd also says in the same paper:

". . . I am altogether indebted to my colleague, Dr. B. Holly Broadbent, whose patient devotion to the scientific side of orthodontia was rewarded by the establishment of the Bolton study and whose technical skill and meticulous precision made possible the roentgenographic cephalometer, by which determinations of form and growth in the face can be made with accuracy and confidence."

For teaching purposes, we prepared a diagram in 1936 in an effort to illustrate the physiology of head development and growth from conception to maturity based on Todd's findings concerning horizontal growth. It is so arranged that it may be helpful to the orthodontist in timing treatment. It is designed to portray growth in all dimensions: (1) horizontal, both breadth and depth, and (2) vertical or dental height.

The periods of accelerated horizontal jaw growth were determined by Todd as follows:

I. From the Twenty-first Day After Birth to the Seventh Month.—He states that this is the most rapid period of any time in life. The lower central incisor, the baby's first tooth, appears through the gum at about the seventh month.

II. From the Fourth to the Seventh Years.—The second most rapid period.

III. From the Eleventh to the Thirteenth Years.—The third most rapid period.

IV. From the Sixteenth to the Nineteenth Years.—The fourth most rapid period.

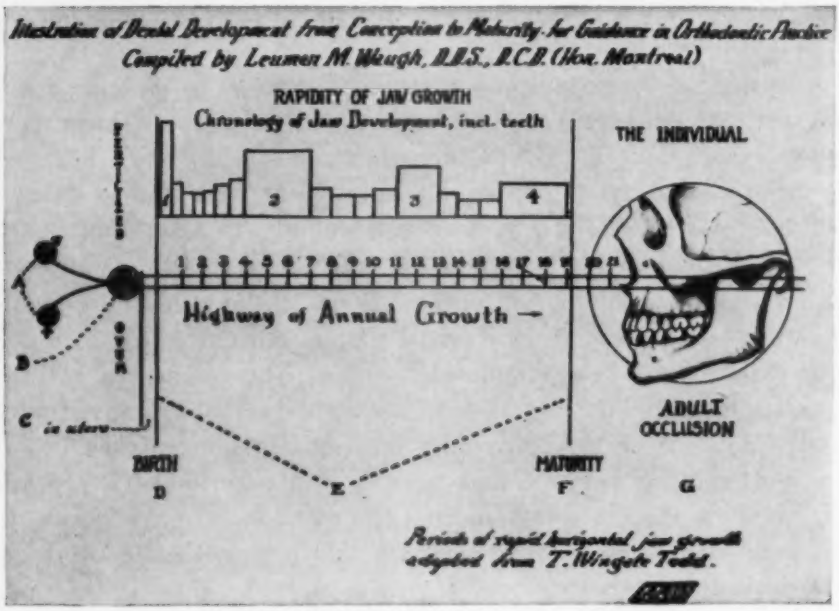
Illustration of Dental Development from Conception to Maturity for Guidance in Orthodontic Practice
Compiled by Leuman M. Waugh, D.D.S., D.C.D. (Hon. Montreal)
RAPIDITY OF JAW GROWTH
Chronology of Jaw Development, incl. teeth
THE INDIVIDUAL
Highway of Annual Growth
ADULT OCCLUSION
BIRTH
MATURITY
Periods of rapid horizontal jaw growth adapted from T. Wingate Todd.

Fig. 1.

In Fig. 1, the upper row, consisting of boxed areas, designates growth: (1) *rapidity* by the box height, and (2) *width*, depicting the time factor. The lower long horizontal lines portray the growth highway and the short vertical lines denote years from 1 to 21. The letters denote the following: *A*, Male and female pronuclei; *B*, fertilized ovum, conception; *C*, gestation, nine months in utero; *D*, birth; *E*, highway of growth numbered by years; *F*, maturity; *G*, individual adult occlusion.

Detailed Explanation of the Foregoing Divisions.—

A. The male and female pronuclei, by their union, coalesce the genes that determine heredity.

B. Heredity is sealed at conception. Thereafter, the inheritance handed on from ancestors cannot be changed.

C. The gestation period includes A and B, and from this beginning the human infant is developed in nine months in preparation for birth.

The important dental events taking place in utero during gestation are:

1. Formation of Meckel's cartilage, site of the formative jaws, at about the sixth week. The mandible ossifies earlier than any bone in the body.

2. Union of maxillary and premaxillary bones in the line of future upper lateral incisors at the fortieth to the forty-fifth days. Failure to unite will result

in clefts of the upper lip or the palate, either hard or soft, independent or in combinations, unilateral or bilateral.

3. Initial calcification of deciduous incisive edges at the fifth month, canines at the sixth month, molar occlusal surfaces at the sixth month, and permanent first molars at the seventh month in utero. The full breadth of the deciduous crowns is formed within the first few weeks after the tooth buds appear, there being three calcification centers for each incisor and four centers for each molar.

4. At birth the tiny jaws contain twenty-four tooth follicles, twenty for deciduous and four for the permanent first molars.

The urge for most rapid growth from the twenty-first day to the seventh month is due to the fact that all the deciduous crowns had attained their full breadth before birth; hence, the need for rapid horizontal growth as their follicles move into alignment in the jaws during the first year.

Normal nursing or suckling is most important during the first seven months. The strenuous exercise necessitated by suckling is a very important factor in jaw growth and is the cardinal factor in the forward development of the mandible, so that by weaning time the lower and upper incisors are in normal labiolingual relations.[7] At birth, the mandible rests in a distal position. It must be carried forward in normal suckling, which action stimulates development in the ramus, condyle, and temporomandibular joint so that the upper and lower incisors will occlude normally. If the infant is fed artificially, the artificial nipple must be short, closely resembling the maternal nipple, to compel the mandible to move forward in suckling.[8] This function, properly performed during the first year prior to weaning, is, we believe, the most important factor in developing the mandible forward; thereby preventing a Class II (Angle) malocclusion or distal resting position of the mandible. In the examination and recording of the dentitions of about 300 primitive Eskimos in Labrador and of 3,500 in Alaska from 1921 to 1937, we found less than 2 per cent of Class II malocclusions. This we attribute primarily to compelled natural nursing and to the chewing of tough foods after weaning.

Vertical growth of the deciduous teeth will take place gradually as the roots lengthen, the incisor root ends being completed at 1½ years and the canines and molars at about the fourth year. The alveolar process grows as the roots lengthen; therefore, jaw growth from the second to the fourth years is largely in the vertical plane. In the second year the buds for the premolars appear and in the third year those for the permanent second molars.

The deciduous dentition is completed by the fourth year. The jaws usually attain their adult transarch width in the deciduous molar regions at about this time. The deciduous molars and canines combined occupy sufficient horizontal area to accommodate their successors, the premolars and permanent canines.

The permanent first molar crown attains its full breadth at about the eighth month after birth. It gradually takes its position distal to the second deciduous molar and erupts at about the seventh year, although its root ends do not become completed until about the tenth year.

There has long been a difference of opinion as to whether appliance therapy should be active during periods of accelerated growth or between them. While we advocate synchronizing treatment with growth, this needs elucidation.

It has been our practice to observe carefully the development of the jaws, nasal cavity, and entire face, comparing this with the average norm for the age of the patient. If Nature is making satisfactory progress, unaided by appliance therapy, the observation is continued by systematic occasional visits to the office. However, if Nature manifestly lags, then appliances are used to nudge Nature, as it were. Frequently, this may be toward the end of a norm period and the treatment will naturally extend beyond the average norm range of horizontal growth. This we regard as working with Nature because growth in this patient is slower than average and needs stimulation with appliances until the normal has been attained. We then remove appliances and continue to note Nature's effort. In some cases, no further treatment is needed. In a majority, however, a final truing up is called for at about the twelfth year. This is much less complicated because of the primary preventive treatment.

We must not lose sight of the fact that the dentally normal child is not the one we treat. (Lucky youngster!) He develops a good occlusion without the aid of the orthodontist. It is those who grow outside the physiologic range that need our help. Good judgment here is developed only by the clinician as the result of experience which is based on the wise application of principles of growth and development. We must be constantly mindful of the guiding fact that individual growth patterns in children vary widely within the normal or physiologic range. Relative to the jaws and teeth, this may vary over many months and even as much as two years and yet be within the normal for that child.

Todd found the second most rapid period of horizontal growth to be from the fourth to the seventh years. This is due largely to the growth and aligning of the permanent incisors and canine crowns.[10] Their follicles are staggered at first, the lateral incisors lying somewhat to the lingual of the central incisors, with the canines to the labial. They now begin to move toward their eruptive positions. These crowns are all considerably wider than their deciduous predecessors; therefore, horizontal growth of the jaws must take place to accommodate them. Frequently, developmental spaces are formed between the deciduous incisors and canines. The permanent first molars are also growing toward eruption, which takes place from the sixth to seventh years.

It is noteworthy that at about the sixth year the jaws contain more teeth and follicles than at any time in life, there being a total of forty-eight, of which twenty are deciduous teeth in function and twenty-eight are growing follicles for permanent teeth. The number will decrease as the deciduous teeth are replaced by their successors.[11, 12] The lower central incisor is the first to be shed. The permanent central incisor erupts at 7 to 8 years, the lateral incisors at 8 to 9 years, the first premolars at 9 to 10 years. The root ends of

the central incisors are completed at 11 years and the lateral incisors, premolars, and second molars at 12 years. The tooth buds of the permanent third molars begin to form at about the eighth year.[13]

The third most rapid period of horizontal growth takes place from the eleventh to the thirteenth years.[14] This growth takes place largely to the distal of the permanent first molar to provide bony support for the second permanent molar. The canine erupts at about 11 years and its root end is completed by the sixteenth year. The second molar erupts at about the twelfth year and its root end is completed at the sixteenth year. There is much important growth during the prepubertal spurt, especially in the condylar region, much of which is concerned with vertical adjustment.

The fourth and last period of rapid horizontal growth is from the sixteenth to the nineteenth years, principally to provide jaw area for the third molar. The eruptive period varies widely from the sixteenth to the twentieth years. The root ends are completed at about the twenty-third year.

The most important preventive procedure in orthodontics is the maintenance of the full deciduous arch length from the distal of the second molar to that of the opposite side until the teeth are replaced by their permanent successors. The permanent first molar thus erupts in its normal position contacting the distal surface of the second molar and should be so retained until all the deciduous teeth are replaced at about the twelfth year. This we recognize as the great essential factor in the development of normal occlusion of the permanent teeth. If the full length of the deciduous arch is not thus maintained, the permanent molars almost invariably shift to the mesial, which results in too little space for the premolars and canines, malocclusion results, and orthodontic treatment becomes a necessity.

Proper appraisal of this is the orthodontist's greatest problem, and proper experience is the essential factor. With all credit to the researcher, his findings are helpful and of use only in so far as they can be applied in the care of our patients. It is upon the clinician that we must rely for final judgment and best guidance.

Fortunately, we have three such orthodontists on the panel today. They are prepared to tell the results of their studied experiences. I know that we shall have a pleasant and informative session. Before introducing the first speaker, I want to invite audience participation for our question-and-answer period. To this end, the Committee has provided monitors to collect written questions from the audience. Please write your questions, sign your name and that of panelist questioned, and hand to the monitor. And now, as Jackie Gleason's pretty young lady would say, "and away we go."

The first essayist served as moderator on an important panel here in Chicago three meetings ago. He needs no introduction to an orthodontic audience. To him was assigned "The Deciduous Dentition." I take pleasure in presenting George W. Hahn.

(Dr. Hahn's paper, "Treatment in the Deciduous Dentition," is found on page 255.)

Our second essayist has attained distinction by forthright contributions to orthodontic progress. His title is "At What Age Should Treatment Be Started?" I take pleasure in calling upon Silas J. Kloehn.

(Dr. Kloehn's article entitled "At What Age Should Treatment Be Started?" appears on page 262.)

Our third essayist distinguished himself at our meeting in Dallas, as well as on other occasions. He is the youthful member of the panel, perhaps because he hails from the state which has laid claim to the Fountain of Youth. He also is too well known to need introduction. The title of his paper is "Cases Indicating Early Treatment." It is my pleasure to call upon H. K. Terry.

(Dr. Terry's article, "Cases Indicating Early Treatment," appears on page 279.)

(Question and Discussion Period)

I am sorry that our time has run out. As Moderator, I want to thank you for having cooperated so well. You have been interested, and audience participation has reached a new high. I also want to thank the three panelists. They prepared excellent papers based on successful experience, illustrated them impressively, stayed within the alloted time, answered questions clearly, and battled with one another like snarling, but friendly, tigers.

To summarize briefly, the following seem to have been the high lights brought out:

1. The proper care of the deciduous teeth is the basis of normal adult occlusion. In this the aid of the general practitioner is essential. Orthodontists should be active in so convincing him and awakening him to his responsibility.

2. Early recognition of conditions that predispose to malocclusion and their prompt correction is the basis of prevention in orthodontics.

3. The correct distal position of the upper permanent first molar in the arch and cranium is the essential factor in orthodontic diagnosis and treatment.

4. Application of the foregoing principles will greatly reduce the need for extraction of good teeth as an aid in orthodontic therapy; thereby providing the best possibilities for the attainment of normal occlusion.

It is pleasing to note the kindlier, more open-minded attitude that has prevailed in our discussion today, contrasting it with meetings in pioneer days when differences of opinion flared into personalities and factions formed and the main issues sometimes vanished. Today we seem to disagree like gentlemen. This probably is due to the fact that the pioneers were guided mainly by empiricism and, being most earnest in their desires to do the best for their patients, had to resort to forceful statements in an effort to stress their convictions. Let it here be said with emphasis that no era in orthodontics has been blessed with greater sincerity. Today we have the benefit of scientific re-

search in dental and orthodontic problems. They are gradually being resolved and we are enabled to give our patients sounder and surer service. In doing so may we conduct ourselves with tolerance for conflicting opinion. Let us work out our differences with sincerity and kindliness, lest we find ourselves in the predicament of a church congregation that had split into bitter rival groups. At the District Church Conference, one of the venerable, tactful ministers was delegated to visit the belligerent congregation to restore harmony. Hopes were high among the ministers, but, on his return after a long and earnest effort, he reported failure and said, "It just beats ——— how brothers and sisters in the same church can so violently hate one another for the love of God."

Let us never allow ourselves to form groups that would hate each other for the love of the service in orthodontics which we are endeavoring to improve for the welfare of our patients.

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TREATMENT IN THE DECIDUOUS DENTITION

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CHANGING trends in the concept of orthodontic therapy which have swung the pendulum away from the ideal of normal occlusion of the teeth and toward a greater appreciation of facial balance have, in some quarters, almost eliminated the attempted correction of malocclusion during the age when the child is most responsive to change, and the factors of growth and development as an aid in orthodontic procedure have been seemingly overlooked in treatment planning. The two extremes (first, the retention of a full complement of teeth in normal cuspal interdigitation on the one hand and, second, the attempt to obtain an arbitrarily conceived facial pattern on the other) should be modified so that the child as an individual, rather than as a dot on a sheet of graph paper, may receive the greatest benefit from orthodontic treatment.

Cephalometric appraisals of clinical results seem to justify the claim that the immediate results of orthodontic treatment are confined to the repositioning of teeth and changes only in alveolar bone. Even so, such changes should not be lightly brushed aside as having no lasting effect upon the development of the dentition and of a better balanced and more harmonious face. As I have stated repeatedly, the reason for the correction of malocclusion in the deciduous dentition is not that the movement of the deciduous teeth will affect the positions of their permanent successors as such, but that the positions of the deciduous teeth in a more favorable occlusion will permit development of the face toward greater balance and harmony, rather than continuing development toward a magnified anomaly. So long as orthodontic treatment is dependent upon the movement of teeth and successful tooth movement is dependent upon the reorganization and rebuilding of bone, it would seem better clinical practice to attempt such changes when biologic conditions are most favorable and growth potential is more propitious.

Unless the orthodontic profession is prepared to discount entirely the premise that a child with a normal occlusion in the deciduous dentition has a better opportunity of developing a normal dental and facial pattern than has a child with a malocclusion, treatment of malocclusion in the deciduous dentition is the unquestioned responsibility of the orthodontists. There is no more justification for an orthodontist to postpone early treatment of a dentofacial anomaly than there is for an orthopedist to permit the same child to reach the age of adolescence with deformed limbs or clubfeet. There is an abundance of clinical evidence to prove that a large proportion of dentofacial deformities

Read as part of a panel discussion on "The Treatment of the Deciduous and Mixed Dentitions" before the American Association of Orthodontists, Chicago, May 20, 1954.

not only become much more exaggerated, but the resulting disharmonies often become so fixed that later treatment at its best cannot entirely overcome the damage that has been progressing over the years.

What is the ideal age to institute orthodontic treatment? Specifically, there is no ideal age, either chronological or dental, at which it is best to institute treatment of all malocclusions. Dr. C. W. Carey has given an excellent statement as to the best time to treat malocclusion: "Generally speaking the ideal age for orthodontic treatment is that age at which a malocclusion if corrected will create a more favorable occlusion which in time will influence development in the direction of balance and harmony with the related structures and provide a substantial contribution to the perfection of the adult or secondary dentition." If we accept this as a working hypothesis, the logic, then, is to so change the direction of stimulation that the face, jaws, and teeth are given the opportunity of developing normally, rather than permitting a serious deformity to develop and then attempting correction by rearrangement of the permanent teeth. There is a feeling among some orthodontists that the difficulties of patient management in this age group are sufficient in themselves to warrant postponement of treatment until the child has arrived at an age when cooperation will be less difficult. It is true that in order to properly fit and place appliances on the teeth, a child should have reached the stage of mental development where such cooperation is assured but, fortunately, this occurs earlier than many of us have been led to believe. Generally speaking, a child with a full complement of deciduous teeth, if properly approached and without interference from the parents, makes a much better patient than do many children of school age whose anticipation has been adversely influenced by contact with other children or by a previous unhappy experience in a dentist's office.

Although nearly all types of dentofacial anomalies found in the permanent dentition have their counterpart in the deciduous dentition, there are certain types of malocclusion common to the latter that tend to grow progressively worse and seldom, if ever, improve without orthodontic interference. Clinical experience has shown that all malocclusions in which there is no reasonable possibility of self-improvement or self-correction should be treated in this age group. It is these well-defined types of anomalies, in which the mechanics of occlusion and bone deformity are such as to make early treatment imperative, that I will discuss. They are:

1. Cross-bites, either unilateral or bilateral.

2. Extreme Class II, Division 1 malocclusion or Class I malocclusions showing maxillary protrusion.

3. Pronounced constriction of both the upper and lower dental arches.

4. Class III malocclusions which, for the purpose of this discussion, will include those Class I malocclusions in which the upper incisors are found lingual to the lower incisors.

So-called posterior cross-bites may be recognized, first, by a buccal positioning of the upper teeth, a lingual positioning of the lower teeth, or a combination of both; or, second, by a lingual positioning of the upper teeth, a buccal positioning of the lower teeth, or a combination of both—the generally accepted etiological factor is external pressure caused by sleeping on the stomach with the weight of the head resting on the hand which is so placed as to support the face. Because of the ability of the mandible to slide to one side, the deformity is usually found to be a lingual displacement of the upper teeth. Posterior cross-bites, however slight, should be corrected as soon as recognized after the completion of the deciduous dentition. Although there are many satisfactory appliances that may be used for the correction of this type of deformity, the use of a flat arch with flat buccal tubes offers the combined advantages of the principles of expansion and torque force. In addition, it is as satisfactory in the treatment of unilateral cases as it is in bilateral cases, which is an advantage not found in appliances limited to expansion only.

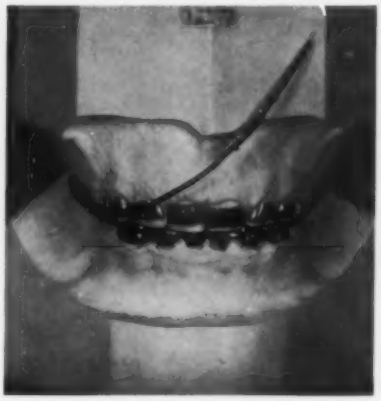

Fig. 1.—Ribbon arch appliance in place with arch aligned to torque upper right molar to the buccal.

Ordinarily, bands on the second deciduous molars carrying the flat tubes and bracket bands on the deciduous cuspids will prove sufficient. Personally, I like the .022 inch by .036 inch ribbon arch, as it is large enough in the vertical dimension to withstand the forces of occlusion. Let us take, for example, the hypothetical case of a child 4 years of age with the upper right cuspid, first deciduous molars, and second deciduous molars in lingual occlusion; the left side of the denture is normal, the arch is formed, placed in the right molar tube, and torqued so that the left end of the arch lies well to the gingival of the left molar teeth. As the left end of the arch is swung down to engage the left molar tube, it exerts a buccal torque on the right molar and cuspid carrying these teeth to the buccal. Usually the pull of the dental ligament will carry the first deciduous molar along, but, should it not, this tooth can be ligated easily to the arch and its position can be corrected (Fig. 1).

The edgewise appliance is another that gives excellent results in these cases. With .022 inch tubes on the second deciduous molars and edgewise bracket bands on the first deciduous molars and canines, a .022 inch round stainless steel arch can be used if expansion is the only force indicated. In severe malocclusions a .022 inch square steel arch can be used for the additional torque force which it offers. There are many other types of appliances that will produce the desired tooth movement, but in these deciduous cases, where time is of the essence, their action is too slow. Treatment of this type of case can be completed in from a few days to a few weeks, and I have yet to see one that relapsed, provided that the pressure habit was controlled. Retention is by means of a thin acrylic palatal plate.

True Class II, Division 1 malocclusion, or Class I malocclusion characterized by marked maxillary protrusion which has progressed to the degree where the upper lip is held out by the upper incisor teeth and the lower lip rests lingual to the upper teeth and the lips, when relaxed, are separated and cannot be closed without a conscious effort on the part of the patient, should be treated immediately upon completion of the deciduous dentition. If treatment is delayed until after the beginning resorption of the roots of the upper anterior teeth, much of the value of such treatment will be lost, as artificial tooth movement at that time seems to stimulate normal root resorption and often the incisors will be exfoliated before treatment can be completed. The etiology associated with these cases is more or less obscure, although heredity, mouth breathing, and sucking habits are at least contributory factors.

The appliance we have found most successful in the treatment of these cases is a modified ribbon arch supplemented with occipital anchorage. Bands carrying flat buccal tubes are fitted to the upper second deciduous molars. Regular ribbon arch bracket bands are made narrower by trimming the gingival border to the lower edge of the bracket. These are fitted to the anterior teeth. Although in some cases it is possible to eliminate the bands from the central and lateral incisors, using them only on the cuspids, our best results have been in those cases where we have used a full appliance. The arch is a section of plain ribbon arch wire formed in the usual manner. Spurs to engage the headcap hooks are soldered on the arch between the lateral incisors and cuspids. For occipital anchorage we use the Johnson headcap described in the November, 1943, issue of the JOURNAL OF ORTHODONTIA AND ORAL SURGERY. The hooks were designed by Dr. G. H. Terwilliger and are fabricated from .062 inch stainless steel. Figs. 2 and 3 show the headcap and hooks in position. With patients in this preschool age group, use of external anchorage twenty-four hours a day is a simple matter; consequently, treatment can be completed in a minimum of time with no chance of establishing a dual bite or displacement of the lower teeth, which so frequently occurs where intermaxillary force is employed. With pressure of from 10 to 15 ounces on each side, treatment is usually completed in from three to six months. Again, the edgewise mechanism is recommended for those who are more familiar with its use or who prefer it to the one just described. Retention is by means of the customary acrylic palatal plate approximately .025 inch in thickness with

an .020 inch stainless steel wire fitted to engage the labial surfaces of the four anterior teeth. Some may question the advisability of using removable acrylic retainers in children 4 years of age. Our experience has been that they are tolerated just as well by patients at this age as they are by older patients, provided that the bulk is reduced to a minimum.

What is the result of this type of treatment? In those cases definitely caused by sucking habits and in which the habit is corrected either before or during treatment, approximately 50 per cent of our patients require no further attention. Although the progress of the deformity has been markedly arrested and an extensive deformity has been reduced through early treatment to one of more simple proportion, the other 50 per cent require a second period of treatment in the mixed dentition.

Fig. 2. Fig. 3.

Figs. 2 and 3.—Headcap with retraction hooks in position.

All true Class II, Division 1 malocclusions caused from other than sucking habits will require a second period of treatment in the mixed dentition and some of these will require even a third period of treatment in the early adult dentition. The logical question then is: Why, with 100 per cent incidence of patients requiring additional treatment, do you advocate treatment at all in this type of case in the deciduous dentition? Our answer is that, with more than thirty years of clinical experience, we believe that in practically every case so treated there has been a sufficient decrease in the severity of the secondary malocclusion to warrant such procedure.

Constriction of both the upper and lower arches is not common and the etiology again is too obscure to warrant a definite statement based upon factual evidence. The edgewise mechanism with round stainless steel arches gently tied back to the molars to prohibit the forward migration of the anterior teeth will rapidly and efficiently accomplish the desired movement. Upper retention is similar to that used in maxillary protrusion; lower retention is achieved with a .040 inch nickel silver lingual arch from second

deciduous molar to second deciduous molar. Although about 75 per cent of the patients will develop a need for a second period of treatment, the reduction in the severity of the secondary malocclusion is sufficient to recommend such procedure.

All Class III malocclusions, as well as those Class I malocclusions showing Class III tendencies, should be treated as early as recognized and as soon as the fontanels have closed.

There are three generally accepted causes for this type of deformity:

1. Those that are artificially acquired by the habit of thrusting the mandible forward until it is locked in malocclusion and there is developed a so-called convenience bite.
2. Heredity.
3. Glandular unbalance.

Fig. 4. Fig. 5.

Figs. 4 and 5.—Headcap with mandibular traction in place.

Due to the lack of development of the head of the condyle, the glenoid fossa, and the ramus of the mandible at this age, it is difficult to determine accurately, even with cephalometric headfilms, whether the anomaly is a result of mandibular displacement or an overgrowth of the mandible itself. Irrespective of the cause, treatment consists of forcibly moving the mandible distally and maintaining it there until the occlusion becomes fixed.

In the artificially created cases, the repositioning of the mandible usually can be accomplished in from a few hours to a few weeks, and the results are almost universally permanent and satisfactory. Those that are a result of hereditary influence require a longer period of treatment. The results in these, as far as our clinical records show, are as follows: Approximately 30 per cent develop satisfactory occlusion and facial balance without further treatment; 40 per cent require additional treatment in the mixed or permanent dentition; of the remainder, there are some that end up with a bimaxillary protrusion and others that can be corrected only by mandibular resection.

Those that seem to be a result of glandular unbalance or, as Clinton Howard called them, acromegaloid types, always show a progressive growth of the mandible, usually continuing through adolescence. In these cases mandibular resection is the ultimate answer. Unfortunately, it is difficult to make a differential diagnosis at this early age, although an experienced clinician often can differentiate by the general appearance of the patient.

In the treatment of all deciduous dentitions showing a forward positioning of the lower anterior teeth in their labiolingual relationship to the upper teeth, whether in Class I or Class III, the procedure is as follows:

A Johnson headcap is fitted and, over a stone model of the chin area, a plastic chin cap is fabricated. Pressure is applied through the use of rubber ligatures connecting the headcap and chin cup (Figs. 4 and 5). Except in those cases where there is continual mandibular growth, retention is no problem, as the normal dental relationship maintains the teeth and jaws in their new positions. In the treatment of cases where the headcap is used, one should be sure that the fontanels are closed before pressure is applied. This usually occurs at about 15 months, but in some children they may remain open much longer.

SUMMARY AND CONCLUSION

1. Class I malocclusions exhibiting either anterior or posterior cross-bites should be corrected in the deciduous dentition, as the percentage of permanency of such treatment is exceedingly high. If anterior cross-bites are allowed to progress, they will develop into true Class III malocclusions, orthodontic correction of which at a later date is extremely difficult, and, in some cases, impossible.

2. Treatment of extreme Class II, Division 1 malocclusions and maxillary protrusions in the deciduous dentition is valuable in that it retards the progress of the malocclusion and gives a better opportunity for success in the second period of treatment, the necessity for which is almost universal. This also applies to bimaxillary constrictions.

3. All Class III malocclusions in the deciduous dentition should be treated as early as recognized, provided that the fontanels have closed. Failure of permanency of such treatment often may be traced to the etiological factors of heredity or glandular unbalance. Correction and retention in these cases are more difficult than in those that have been artificially produced.

As it is generally accepted that, in so far as clinical orthodontics is concerned, the growth of the parts directly influenced by orthodontic treatment is complete at about the time of the eruption of the twelfth-year molars, it would seem reasonable to institute any treatment in which growth is a factor before that time. The fact that a child may require a second or even a third period of treatment is no reason for permitting the deformity to develop to such extremes that even the most radical treatment is of little help in the restoration of occlusal balance and facial harmony.

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AT WHAT AGE SHOULD TREATMENT BE STARTED?

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ANY discussion on orthodontic treatment or appliance therapy is certain to call forth the question, "At what age should treatment be started?" The multiplicity of articles in our literature by many of our great pioneers clearly indicates their efforts to supply these rules. It seems that whenever anyone had accumulated sufficient clinical evidence, observations, and hypotheses to substantiate a rule, some new contradictory biologic fact or factors were uncovered. However, these efforts were not in vain, inasmuch as they provided evidence of facts or fallacies which have served as steppingstones by producing basic principles of treatment which can be used for continued advancement.

History will teach us much if we will only become more thoroughly acquainted with the facts and principles that have guided the advancement of our science. The philosophy of orthodontic treatment during the past fifty years can be divided into two contradictory rationalizations, each of which has contributed to our present concept of treatment.

The first twenty-five years could be termed years of optimism, in which the general thoughts expressed and published proclaimed the possibilities of orthodontic treatment. It was believed that teeth could be moved to almost any predetermined position and relationship; and that the force of the appliance on these teeth, with the aid of normal function, would stimulate growth of the facial bones to accommodate their new alignment.

The general concept was that every person was born with a potentially good facial balance and relationship and that malocclusion was primarily the result of postnatal environmental origin. Much time and effort were spent in obtaining complete histories on each case to determine the etiology. There were a few inferences, without much evidence, about inherited characteristics but most of the considerations were toward general physical health, dental health, and every conceivable habit. It was assumed that any malocclusion could be treated to an ideal occlusion with a corresponding influence on facial growth, provided that the patient had good health and was divested of all habits producing abnormal pressures or influence on the teeth or facial bones. Many of the generalizations and conclusions of this period have stood the test

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of time and are still acceptable and applicable for analysis and treatment. This optimism may have been an influence on the numerous changes in appliances which seemed to occur quite regularly during this time. Many of the appliances designed during this period are still being used, while others have been discarded, only to be returned with some refinements.

The introduction of roentgenographic cephalometry by Broadbent in 1930 provided a new instrument and method for accurate scientific study and measurement of facial growth and development. The first evidence of the accuracy and possibilities of the method was given in his classic presentation,[1] "The Face of the Normal Child."

The continuation of this work has given us a good concept not only of normal facial growth, but also of some of the abnormalities resulting from growth disturbances. It has provided a method of studying eruption of the teeth and their relation and their influence on facial growth.

The new instrument and method were applied clinically for assesment of orthodontic movement and its influence on facial growth. The cephalometric appraisal of orthodontic results by Brodie, Downs, Goldstein, and Meyer[6] failed to demonstrate that orthodontic treatment influenced growth of the facial bones. I should like to quote one of their most important conclusions: "Actual bone changes accompanying orthodontic management seem to be restricted to the alveolar process. The ability of this structure to adapt itself to changes in position of the teeth is extremely great." Further investigation by Brodie[3] stated that the morphogenic pattern of the human head is laid down at birth and remains remarkably stable throughout life.

Such evidence was certain to have a profound influence on orthodontic thinking, as well as clinical therapy. The knowledge that abnormal relationships and asymmetries of the face existed at birth resulted in a complete change toward etiology and analysis. The implication that appliances could not increase growth or change the pattern was most discouraging to many.

This introduced a change in the philosophy of treatment from optimism to pessimism, expressed in our thinking and literature by an increased number of articles on the limitations of orthodontic treatment. The conclusion reached by many in our profession was that extraction of four premolars was the only logical approach left to a successfully treated, stable occlusion. It was presented as the solution to all our failures and relapses. Thus, the thinking changed from idealism to compromise and expediency, which many considered a retrogression in our science.

A careful analysis of the results of treatment with extraction has provided additional information in spite of the comparatively short period of observation. The continued study of these cases will present much more knowledge. It can be concluded, however, that extraction is not the solution to all the problems of relapse and failure. Rotations, overlapping of contacts, and collapse of arch form can and do occur, in spite of sufficient space with open contact where teeth were removed. This has produced conclusions that each person has a morphologic dental arch pattern which is maintained by the dynamic balance of the forces operating upon it and surrounding it. This

may substantiate the conclusions and evidence of our pioneers that function and abnormal forces, such as produced by abnormal habits and environmental forces, are important factors to be considered in the stability of the human denture.

Orthodontics is entering a new era with a better knowledge of the possibilities of treatment within the limitations of each individual.

It is most important to understand that the limitations of treatment have not increased, but merely our knowledge of them. Growth cannot be accelerated beyond its given potential, and it never was, but it can be, and frequently, is inhibited and abnormally directed in many cases. Abnormal alignment and relationship of teeth can produce imbalance of all the physiologic forces operating on the growth potential of the face. Growth of the face and eruption of the teeth are considered and accepted as synchronized processes of facial development with a range of variability. If this range of variability becomes too great, however, the early eruption of full-sized teeth into a jaw that is lagging or retarded in its growth is certain to produce complication. The teeth will erupt, but of necessity they must deviate from the usual path and position. This will frequently interfere and inhibit the intended optimum growth and development of the face.

It would seem only logical that these interferences and inhibiting factors should be removed as early as possible. We can conclude, therefore, that treatment should be started as soon as any inhibiting factors are present which will disturb the facial growth and development potential of the patient. Thus, some malocclusions should be treated in deciduous dentition, some in mixed dentition, and some after eruption of all the permanent teeth.

It is still not possible to provide unalterable or fixed rules on when to start treatment and how to treat, but this should not be frustrating or disturbing to anyone with full knowledge of the facts available. The scientific knowledge of growth and development with its many variabilities, as well as the clinical evidence, does provide some sound basic principles applicable to each individual case for a comprehensive analysis and treatment plan which will produce a good, functioning, stable occlusion.

The interpretation and utilization of these principles can be presented more clearly by their clinical application in actual case analysis, treatment planning, and final results.

Fig. 1, *A* and *B* shows right and left views of a 4-year-old patient with a cross-bite on the right side. This cross-bite is the result of a lack of width in the maxillary arch functioning against a mandibular arch of good form and size. The mandible is shifted to the right upon closure for functional convenience. We have all seen the evidence of asymmetry in facial form and musculature development that accompanies these cases if they are permitted to continue this relationship during the transitional period and after eruption of all the permanent teeth. Treatment time increases, facial asymmetry increases, and the stability of the final result decreases in direct proportion to the increased age of the patient before treatment is started.

Fig. 1, *C* and *D* shows right and left views of the same case after three months of treatment. The appliances used were edgewise arch appliances with bands on only the deciduous canines, first molars, and second molars.

A. *B.*

C. *D.*

Fig. 1.

A. *B.*

Fig. 2.

There are a number of various appliances which can be used efficiently for this treatment, and the choice should be the one most efficient for the individual operator.

The most important principle is the early correction of the relationship of the teeth with increase of maxillary arch width, thereby permitting the in-

herent growth and developmental potential of the face to reach its optimum. The change in mesiodistal relationship of the molars on the left side, as well as the correction of midline of the maxillary and mandibular arch, indicates the change in position of the mandible with the removal of the interference.

It is most important that the appliance of choice be most efficient in providing as short a time as possible for treatment, with removal of the appliance to permit the natural forces of growth and development to continue uninhibited.

Fig. 2 shows occlusal views of the case—*A*, before and, *B*, right after three months of treatment. Note the change in arch form and alignment of the incisors resulting from increase in width of the maxillary arch and the effects of the normal functioning forces.

A. *B.*

C.

Fig. 3.

Fig. 3, *A* shows a Class I occlusion in a 5-year-old patient, with the maxillary incisors functioning lingually to the mandibular. This patient had two months of treatment. The models in Fig. 3, *B* were taken two years later with the maxillary permanent incisors erupting labially to the mandibular.

Fig. 3, *C* shows the occlusal view of the acrylic splint used for treatment of this case. There are any number of various appliances that can be used for treatment of this type of malocclusion. The splint has proved very efficient in this type of malocclusion in deciduous dentitions, with a minimum of irritation to the patient. The acrylic covering the teeth opens the bite,

thereby removing the interference of the lower incisors and permitting the mandible to assume its normal position if there was any thrust. It incorporates the anchorage of all the maxillary posterior deciduous teeth, as well as the palatal tissue. The wires anchored in the acrylic are adjustable to produce a labial force on the incisor teeth. This removable splint has proved very successful in mixed dentition treatment with one or more maxillary permanent incisors erupting lingually to the mandibular. It requires the minimum amount of time for construction and treatment, with the least amount of trauma on the teeth.

Several years ago, at the presentation of a paper on the treatment of cross-bites, I boldly made the statement that I saw very few of these cases in my practice. The clinician answered that he found the same until he encouraged the dentists to examine more carefully the occlusion of children with deciduous dentitions. Upon my return, I did the same and am constantly finding more malocclusions in the deciduous dentitions which are certain to interfere with growth and development.

It is an accepted fact that growth is our best ally in treatment. We know that the rate gradient of facial growth decreases with age. It seems logical, therefore, that the removal of any factor or force which might retard or interfere with growth and development of the face should be accomplished as early as possible.

The most disturbing factor in deciduous dentition treatment is a lack of patient cooperation. This is particularly true in cases of disharmony of the component parts of the face, such as found in Class II malocclusions, because the treatment time is longer and requires more patient cooperation. The cooperation for treatment in the deciduous dentition can be obtained by proper education of the parents. It is not uncommon to have parents of 3- and 4-year-old children demand treatment when the malocclusion is severe enough to interfere with mastication. This concern for the health of the child provides the necessary stimulus for cooperation. Education of the dental profession and the parents to the advantages of early treatment will permit us to accomplish more in less time with better results.

In many types of malocclusion, where the necessary cooperation cannot be obtained in deciduous dentition age, good results can be obtained in mixed dentition, at the age of about 7 or 8 years.

Right and left views of a 7-year-old boy with a Class II, Division 1 malocclusion are shown in Fig. 4, *A* and *B*.

The plan of treatment was to inhibit the forward growth of the maxillary arch until the mandible and mandibular teeth had gained sufficiently and would be in correct functioning relationship. If possible, all the maxillary teeth should be moved distally to provide normal functioning relationship as early as possible.

The mandibular arch form, as well as tooth alignment, is good; therefore, it is not to be disturbed, but given every opportunity for optimum growth and development.

The appliances used for this case have been described on a number of occasions and consist of bands on the maxillary first molars with an arch and

face-bow to which is attached elastic traction anchored to a cervical neck band. This appliance was worn only at night, and is shown in greater detail in Figs. 6 and 7.

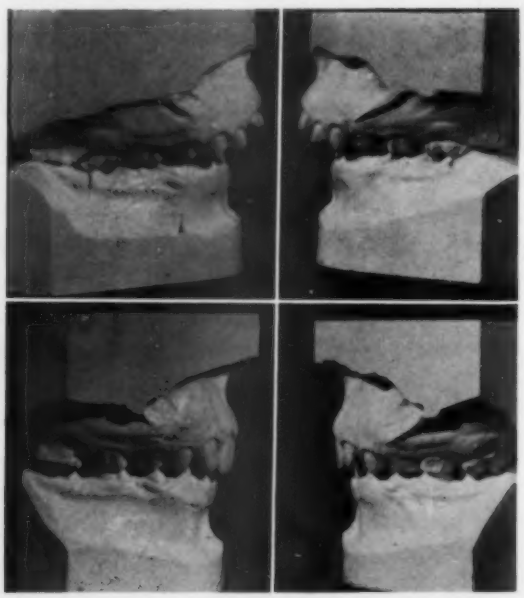


Fig. 4.

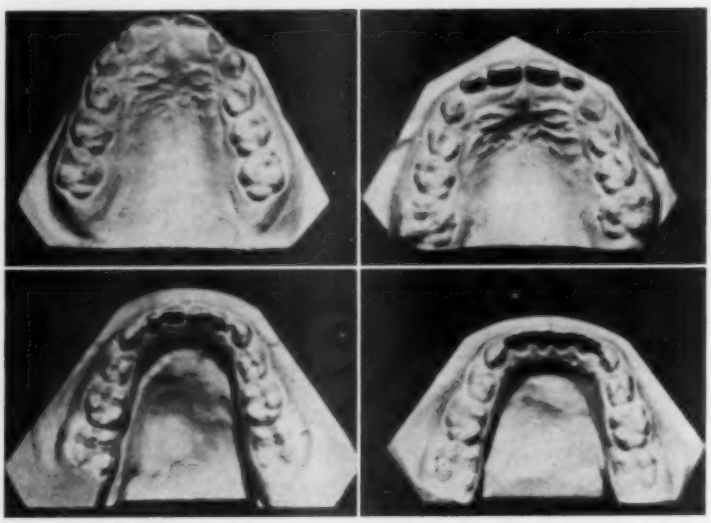


Fig. 5.

Right and left views of same case after eighteen months of treatment at night only are shown in Fig. 4, *C* and *D*. The maxillary teeth are in correct functioning relationship with their antagonists in the mandible. This appears to have been accomplished by a distal movement of the maxillary teeth with a normal forward growth of the mandible.

Fig. 5 shows occlusal views of the same case, before treatment (*A*) and right after eighteen months of night treatment only (*B*). There were no appliances on the mandibular arch.

Fig. 6 shows the appliance used for the treatment of these Class II, Division 1 cases. It consists of bands on the maxillary first molars, with buccal tubes to receive a round steel arch .045 inch in diameter. A face-bow, .060 inch in diameter, is soldered to this arch at the midline and follows the contour of the face. Stops are soldered on the arch anterior to the molar tubes and are used as the case demands. If the anterior teeth have open con-

Fig. 6.

A. *B.*

Fig. 7.

tacts and the maxillary incisors are tipped labially and flared out, the stops are placed several millimeters mesial to the tube, permitting the arch to rest against the incisors and tip them lingually. After they are in good axial inclination and the contact points are closed, the stops are moved backward to place all the force on the molars. If there is a crowding of the incisors, demanding increase of arch length, the stops are so placed as to keep the arch about 3 or 4 mm. anterior to the incisors during the time that the molar relations are being changed.

Elastic bands are hooked on the face-bow and attached to the cervical strap at the most posterior point. The amount of pressure from the elastics is determined by the patient's reaction, pain being the indicator to decrease the pressure. Patient tolerance in my office varies from ¾ to 1½ pounds, measured by spring scale. These elastics must be changed twice a week to maintain a constant pressure.

This appliance is placed by the patient before retiring and removed in the morning. It is important that it be worn seven nights per week, about ten to twelve hours per night. Patient cooperation is important in all orthodontic treatment, but particularly so with this appliance. Therefore, it is important that the patient has reached the age of cooperation before treatment is attempted.

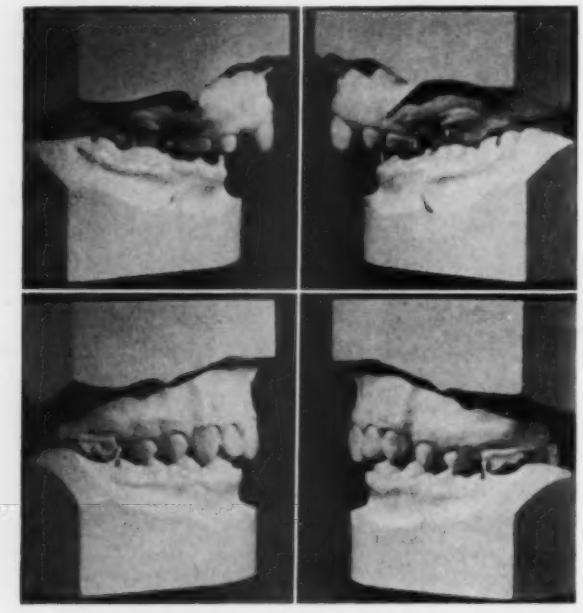


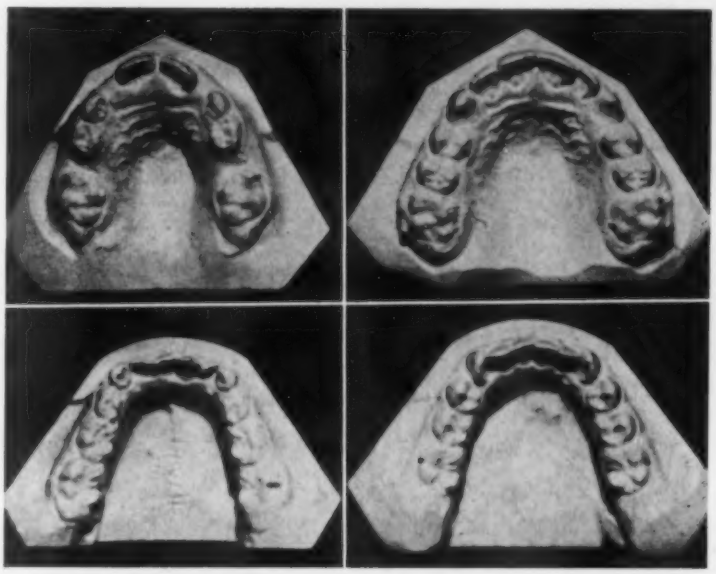
Fig. 8.

When headcap treatment was first used, most of the maxillary molars were tipped distally. This was found to be undesirable. The uniting of the arch to the face-bow permitted better control of the axial inclinations of these teeth. When the arch and face-bow lie in the same plane, the pressure is at right angles to the molars and maintains them in their existing axial inclinations. If the face-bow lies close to the lower border of the mandible and below the arch when hooked on the cervical strap, it produces a downward pull of the anterior portion of the arch. This will produce a distal tipping of the maxillary molars (Fig. 7, *B*). If the face-bow lies above the arch, it produces an upward or gingival movement of the arch, resulting in a distal root movement of the molars (Fig. 7, *A*).

When the molar cusps are long and the fossa deep, some distal tipping is desirable to unlock occlusion. This can be corrected later by bending the

face-bow up, which will move the apices of the molar roots distally and correct the axial inclination of those teeth.

The placing of the appliance at night and its removal in the morning can produce considerable strain on the molar bands if the patient is inclined to be careless. This will result in loose bands unless they are sufficiently heavy and made carefully. I am using band material $\frac{3}{16}$ inch in width and .006 inch in thickness.



A. *B.*

Fig. 9.

Right and left views of a Class II, Division 1 malocclusion in a 7-year-old boy are shown in Fig. 8, *A* and *B*. This Class II relationship of maxillae and mandible perhaps was present at birth. Complications occurred with the early loss of the maxillary right and left deciduous second molars, resulting in a mesial drift of the permanent first molar. When the patient was first seen the maxillary first permanent molar was functioning against the mandibular deciduous second molar.

The mandibular arch form was fair, with only a slight crowding in the incisor segment.

The analysis and plan of treatment was to increase maxillary arch length to provide sufficient space for eruption of the first and second premolars and canine, and to inhibit the forward growth of the maxillae. The maxillary teeth should be moved distally into correct functioning relationship to the mandibular.

The mandibular arch and teeth are not to be disturbed at this time, but given every opportunity for optimum growth and development.

The appliances used were the same as those described for the previous case using cervical anchorage.

The increase of arch length was accomplished by placing stops in the mechanical arch, thereby keeping it about 3 mm. anterior to the incisors. As the molars moved distally, the stops were moved distally on the arch.

Fig. 8, *C* and *D* shows right and left views of the same case after the patient had worn this appliance for two years at night only. There is excellent functioning relationship of the teeth, good facial balance, and fair alignment of the teeth.

Fig. 9 shows occlusal views of the same case—*A*, models before treatment and, *B*, right after treatment.

There has been no appliance on the mandibular teeth. The right and left canines are rotated and slightly crowded. This is being corrected.

Fig. 10 shows photographs, before (*A*) and after (*B*) treatment. The facial balance is good, but it is evident that any forward movement of the mandibular arch would have been undesirable for good stability of the final result.

A.

B.

Fig. 10.

Fig. 11, *A* and *B* shows right and left views of a boy 10 years of age with a Class II, Division 1 malocclusion. This case is complicated by a mesial drift of the left maxillary first molar, resulting in a lack of sufficient space for eruption of the left maxillary canine.

Fig. 11, *C* and *D* shows right and left views after eighteen months of treatment. Appliances used were bands on the first molars, with cervical anchorage worn at night only. The deep overbite resulted in a locked occlusion. A

bite plate was worn for one year during the daytime to stimulate vertical growth in the buccal segments.

The teeth have been placed in good functioning relationship with good facial balance, permitting better development of facial musculature and fair alignment and arch form.

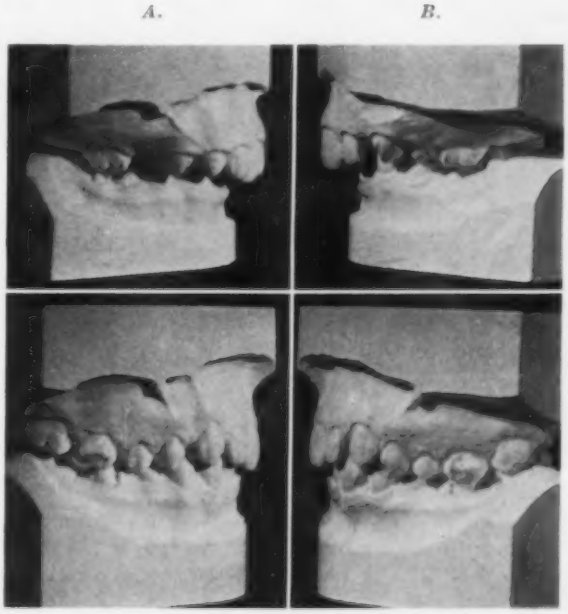


Fig. 11.

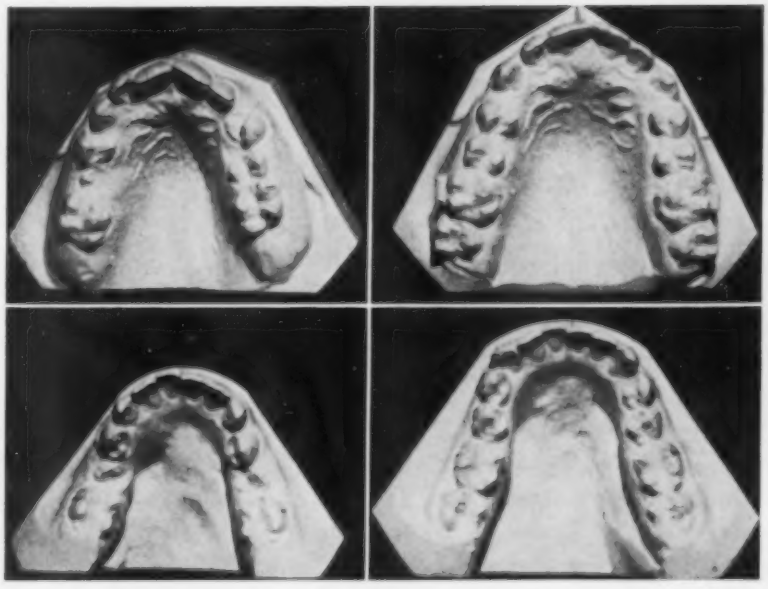


Fig. 12.

Fig. 12 shows occlusal views of the models, before treatment (*A*) and right after treatment (*B*). No appliances were placed on the mandibular teeth.

The maxillary arch length has been increased to permit eruption of all the teeth. The mandibular arch has developed well. There are slight details which need further correction, but the major abnormalities have been guided into good relationship.

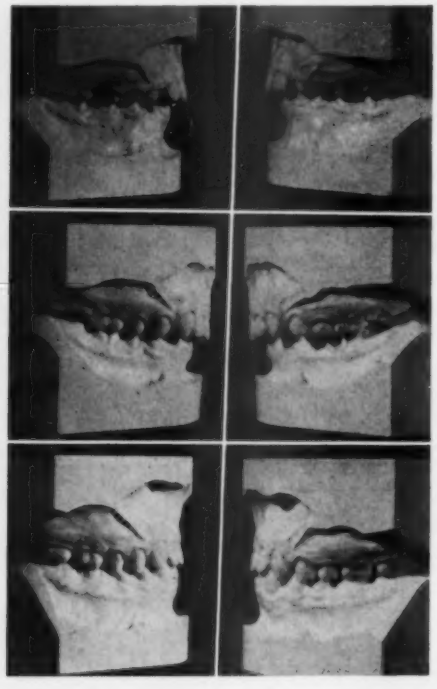


Fig. 13.

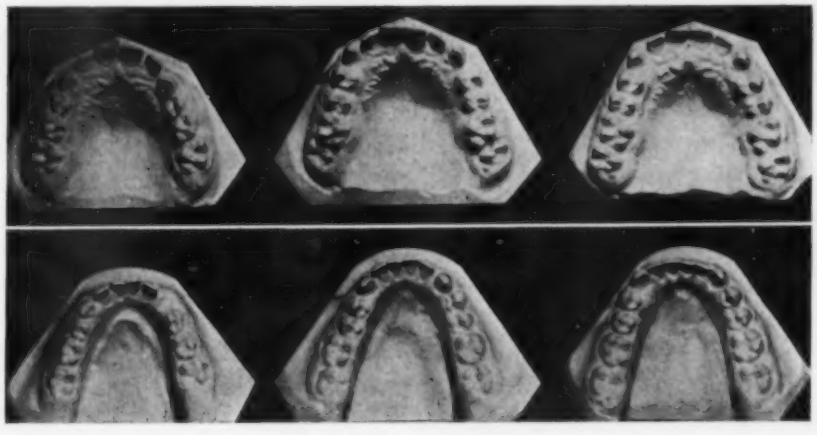
This case was chosen because, in my opinion, treatment should have been started two years earlier. Evidence from other similar cases leads me to believe that the removal of those factors interfering with growth and development before the premolars started to erupt might have prevented some of the rotations, with better arch form. It is most gratifying to observe growth, development, and eruption in many cases after removal of the inhibiting factors, such as deep overbite and abnormal relationship of maxillary and mandibular teeth, with the correction of abnormal forces from the facial musculature and tongue.

The philosophy demands that treatment be started as early as possible with removal of those factors that will inhibit or disturb the facial growth and developmental potential. The treatment plan and appliances must be directed specifically at those teeth that are in an abnormal position without disturbing those in good position and good balance. Let us direct our efforts toward guiding growth and eruption, thereby permitting the natural developmental forces to fulfill their potential for each patient.

The increase of our knowledge of growth, development, and eruption is certain to be followed by a change in our thinking and treatment. Unfortunately, there are still some cases of malocclusion in which analysis does not provide sufficient evidence for a logical treatment plan until all the permanent teeth have erupted.

Right and left views of a boy 9 years old with Class I malocclusion are shown in Fig. 13, *A*.

The patient had enjoyed good facial growth, with a well-developed mandible and good facial musculature. The molars were in cusp-to-cusp mesiodistal relationship, with open contacts in the mandibular arch. These open contacts frequently are the result of a large tongue, with an imbalance between the tongue and the lips. Good growth and development frequently correct this abnormality. Therefore, this case was kept under observation during eruption of the permanent teeth. There were no detectable environmental factors which would inhibit development, except possibly a slight deep overbite. It is impossible at this age to estimate the amount of space necessary for the mandibular canines and premolars, and occasionally the molars move mesially without mechanical assistance. It is imperative, therefore, that no treatment be instituted at his age because it might interfere with development. Furthermore, the abnormalities of this case can be treated just as successfully at a later age, with possibilities of a shorter period of treatment.



A. *B.* *C.*

Fig. 14.

Unfortunately, this case did not improve with eruption of the permanent teeth. The mandibular arch contacts did not close. The malocclusion remained about the same, except for the upper left premolars which, upon eruption, assumed a buccal relationship to the mandibular premolars.

Fig. 13, *B* shows right and left views at the age of 13, with eruption of all the permanent teeth, including the second molars. Full edgewise arch appliances were placed at this time. Right and left views after ten months of treatment are shown in Fig. 13, *C*.

Fig. 14 shows occlusal views of the case; *A*, at 9 years of age, *B*, at the age of 13 with no treatment, and *C*, after ten months of treatment.

There are a few other types of malocclusions with severe facial disharmony and growth disturbances, such as Class I malocclusion with lack of arch length sufficient to accommodate all the teeth and the severe Class III malocclusion in which our knowledge is insufficient to direct early treatment advantageously. Until such time as we have more available information on the why and when of these severe cases, idealism will be sacrificed for compromise.

Fortunately, these cases are few in number and, with continued research and study, sometimes they may be controlled and directed to obtain better results by early intervention.

SUMMARY AND CONCLUSIONS

The goal in orthodontic treatment—correct functioning relationship of the teeth, good alignment of the teeth, and good facial balance—has remained very much the same throughout the history of our profession, but the method and approach have changed with the increase in knowledge. The possibilities of orthodontic treatment have increased with the advance in concept of functional occlusion. We can take pride in the contributions made to the advancement of dentistry and orthodontics, as well as to the many beautiful clinical results. These successful clinical results provided a wave of optimism in which the mechanical appliances and therapy were credited with the accomplishment. We now recognize that our best ally in these results was good facial growth.

The many failures provided sufficient evidence that there were and still are many unknown factors which supply the necessary stimulus for further research. During the early years of our science, most of these failures were considered errors in appliances. Failures always provide stimulus for study; study and research brought new concepts; new concepts were followed with new appliances.

This general mechanical concept was supported by some biologic theories, hypotheses, and conclusions. Some of these have stood the test of time and are still accepted as facts, while others have been disproved. It is most fortunate for orthodontics, as for all sciences, that there are men who question hypotheses and conclusions not supported by facts. Those constructive criticisms have resulted in new methods of research, providing more knowledge and facts which have so substantially guided the advancement of our science.

The contributions of the cephalometric method of study were many, but particularly did it provide evidence of the limitations of orthodontic appliances and treatment. The limitations and variations within each person are far too numerous to cover within the time and scope of this article.

A few of the principles of the limitations applicable to all clinical analysis and treatment must be constantly kept in mind in all our clinical work: first, that facial growth cannot be accelerated beyond the potential of the individual patient; second, that the facial pattern is quite stable and limited in its response to alterations by orthodontic appliances; third, positive evidence that there is no such thing as stationary anchorage in the oral cavity. For ex-

ample, the use of intraoral elastics in treatment of Class II malocclusion results in more mesial movement of the mandibular teeth than distal movement of the maxillary teeth. If the analysis of this type of malocclusion indicates correct relationship of the mandibular teeth to their supporting bone and good balance with the forces of occlusion, anchorage for distal movement of the maxillary teeth must be obtained outside the oral cavity to obtain the most stable occlusion.

The goal, ideal occlusion, can be obtained only with a better knowledge of the possibilities within the limitations of each person. The advancement in orthodontics will be guided and determined by the increase in knowledge of facial growth and tissue response. The clinical application of these facts will depend upon our work and effort in correlating these facts with analysis and treatment. Advancement will not come alone from new appliances or from mastering the technique of those we have, but rather from a careful study of the fundamental facts and conclusions in our present and future literature on this subject.

One method of research is the finding and determining of facts, but just as important is the correlation and clinical application of these facts. The clinical orthodontist can contribute just as much to the advancement of our science as the laboratory researcher and teacher. To accomplish this, he must have a good understanding of the facts and of the basic principles which are the foundation of our science. This, in turn, will provide him with the ability and courage to make contributions.

There is sufficient evidence to conclude that every person has a definite dental arch pattern, determined and directed by the functional forces and factors operating upon it. The question arises, Are these forces and factors the same as intended for the patient when the malocclusion, with its abnormal functioning relationship, is permitted to continue through the transition period and until all the permanent teeth have erupted? Abnormal function is certain to influence growth and development of the musculature and the alveolar bone, which can be reflected in the dental arch pattern. The removal of inhibiting factors, plus the guiding influences of orthodontic appliance at the correct time, can produce changes in arch form that will be permanent and stable. These changes, if made at an early age during active growth, result in corresponding changes in the surrounding tissues, namely, the alveolar bone, with the periodontal tissue, the transseptal fibers, and the connective tissue interlacing the bone, as well as all the facial musculature. These observations and conclusions are made from clinical evidence. More fundamental knowledge on the growth and development of these tissues will reflect its influence on our clinical improvements.

The question, "When should treatment be started?" should no longer present the problem of the past. As our knowledge increases, so will our thinking. Treatment must be directed and correlated with growth and not against it. This philosophy demands that treatment be started as early as any factors and forces are recognized which will inhibit growth and development.

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CASES INDICATING EARLY TREATMENT

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THERE are a great many children requiring orthodontic treatment who are not receiving it. When one appears before you, the best men the world has to offer toward making the profession of orthodontics a success, he should make a great beneficial contribution toward the future success of our profession, since, after all, he is taking your time away from productive work or the help some of those children might be receiving. It is with regret that I feel that the bit I have to add is not justifying the combined time of such great professional people.

There seems to be little argument over when to treat an Angle Class III malocclusion—as soon as it can be treated and in the simplest possible way. All the various proponents of sources of pressure seem to use the tongue depressor, the inclined metal or acrylic bite, the simple lingual arch with an auxiliary spring, and even a labial arch with a ligature, with all the zest imaginable to help that type of mesioclusion very early. Why?

The physiologist, the anatomist, and the orthodontist all seem to feel that the mechanical locking of the maxillary incisors lingual to the mandibular incisors might produce some embarrassment to the normal growth processes active in the premaxillary region. Once that growth period passes, the correction, for external appearance, still may be accomplished, but many times by a tooth tipping and not a true growth-responding treatment. Since it corrects quite easily and then most frequently may be permitted to grow normally without appliances, there is little difficulty in getting agreement regarding early treatment.

The next type of case that all the various proponents seem to agree to treat early, but not quite so wholeheartedly, is the posterior and anterior cross-bite. The anterior cross-bite is a Class I malocclusion with one or more maxillary incisors locked lingual to the lower incisors in occlusion, as in a Class III case. More agree on the early treatment of the anterior cross-bite than the posterior. Why? Again there is general agreement that for facial symmetry it is best not to have mechanical forces interfering with normal growth on one side and not on the other. The posterior cross-bite is more frequently postponed for treatment, and apparently the only reason is that in the posterior part of the mouth its effect is not quite so noticeable. Growth factors are still being influenced. The mechanical force of an incorrectly occluding inclined plane of a deciduous molar can certainly reach locally the equal of the pressure exerted by the fist while watching television (and a California practice has been built on that). There is sufficient agreement that we see many posterior cross-bites under treatment but some are advised to wait, resulting in lasting facial dis-

Read as part of a panel discussion on "The Treatment of the Deciduous and Mixed Dentitions" before the American Association of Orthodontists, Chicago, May 20, 1954.

harmonies. The rhinologist feels that some deviated septa may be caused by this condition, but frequently a narrowing of the nasal air passageway on the affected side is the result. They are usually simple to correct and there is rarely occasion to postpone treatment when the best interest of the patient is at heart.

Fig. 1.

A. *B.*

A. *B.*

Fig. 2.

Fig. 1.—Patient F. B. *A*, At 5½ years of age, profile before treatment. *B*, At 6½ years of age, profile at beginning of rest period.

Fig. 2.—Patient F. B. *A*, At 5½ years of age, occlusal relation before treatment. *B*, At 6½ years of age, occlusal relation at time of rest period.

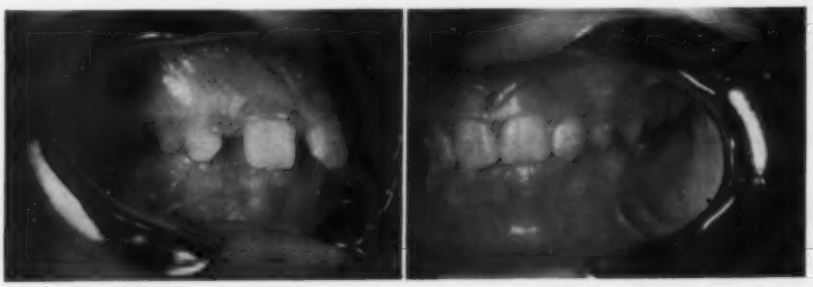
Why, then, must there be such a variance of opinion toward early treatment of the Angle Class II malocclusion in the deciduous and mixed dentition stage? We have the same active growth process. We have the mechanical interference and, many times, in more ways than in the Class III. The soft tissue seldom adds to the retrusion of the maxillary incisors or the protrusion of the mandibular incisors in a Class III malocclusion. It very frequently is a major factor in adverse appearance in a Class II, Division 1 case. The lower lip, usually mechanically, falls under the maxillary incisors and protrudes them quite easily, since the upper lip also is not functioning properly and therefore does not hold the maxillary incisors back. Being located thus, it does also give some pressure toward further retrusion of the mandibular incisors. Resulting mouth breathing and lack of normal use of the nasal air passages certainly will not encourage their development.

In a short discussion such as this, presentation of individual cases seems to be the best method of bringing out the various points of interest.

F. B., a white, boy, aged 5½ years, had a Class II, Division 1 malocclusion with a markedly closed bite (Fig. 1, *A*). When the maxillary central incisors do erupt, the lower lip will immediately give pressure toward their protrusion (Fig. 2, *A*). The boy's parents were advised that he should undergo correction for the Class II condition, mainly to break up the obvious sequence that has started. Estimated treatment time for the first stage of correction was one year, with a second phase at possibly 9 to 10 years of age for about two years. The patient's cooperation was excellent and his response was favorable. His appliances were removed after ten months (Figs. 1, *B*, and 2, *B*) and he has remained under observation every six months for three years. Freddie will go back under treatment this fall, his present condition being a Class I malocclusion, closed bite, with slight crowding in the lower arch.

A. *B.* *C.*

Fig. 3.—Patient D. H. *A*, At 7½ years of age, before corrective treatment. *B*, At 7½ years of age, immediately after placing the Oliver guide plane. *C*, At the age of 9 years, rest position without appliances.

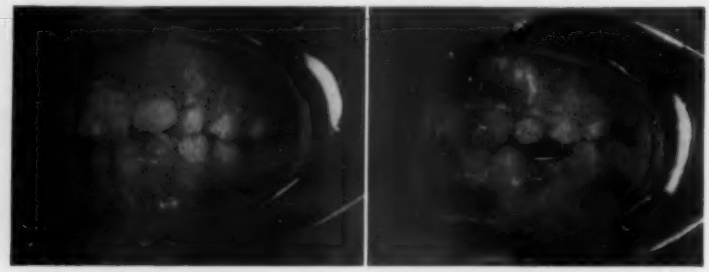


A. *B.*

Fig. 4.—Patient D. H. *A*, At 7½ years of age; right occlusion before treatment. *B*, At 9 years of age; left occlusion still under treatment but during a short rest period.

D. H., a white boy, aged 7½ years, has all the adverse factors of a Class II, Division 1 malocclusion (Figs. 3, *A*, and 4, *A*). Could you deny him some correction at this time? His parents have been advised that he will be under treatment and observation for possibly five years. His nasal problems, including frequent colds, have lessened considerably and his mouth breathing has been reduced to periods during exciting television shows, according to his dental hygienist mother (Figs. 3, *B* and *C*, and 4, *B*). She does complain, however, that we haven't helped his ears even slightly!

C. M., a white girl, aged 8 years, has much less chance of the soft tissue affecting her case adversely (Fig. 5, *A*). She is a mouth breather and the arch is somewhat narrow, with a decreased vertical dimension. Again, the sequence is evident, although considerably less, as the lower lip is behind the maxillary anteriors "over half the time." Two-stage correction was advised and response has been favorable. Appliances have been discontinued under the condition shown in Fig. 5, *B*, and the patient will be observed every four months, with the expectation of some slight further correction. At present she is a Class I case with a normal vertical dimension. She is to continue with lip exercises during her observation period.



A. *B.*

Fig. 5.—Patient C. M. *A*, At 8 years of age, occlusion before treatment. *B*, At 9½ years of age, occlusion at time of rest period.

Now, just how sound is the approach for the correction of these Class II malocclusions in these early stages? Most frequently the malocclusion is an Angle Class II, Division 1, and rarely a Division 2, usually with an insufficiency in vertical dimension. Dr. Angle[1-2] defines it as: "Relative mesio-distal relations of jaws and dental arches abnormal, all the lower teeth occluding distally to normal the width of one bicuspid tooth and producing very marked inharmony in the incisive region and in the facial lines . . . the first division characterized by more or less narrowing of the upper arch and lengthened and protruding incisors accompanied by abnormal functions of the lips and some form of nasal obstruction and mouth breathing. . . . The second division is characterized by less narrowing of the upper arch, lingual inclination of the upper incisors and more or less bunching of the same, and is associated with normal nasal and lip function." Dr. Angle goes on to outline a method of treatment involving the removal of premolars and then follows his recommended procedure with: "It should be remembered that this plan of treatment, although perhaps the only practicable one in a large percentage of cases, has one serious objection in that the abnormal mesio-distal relation of the jaws is not changed, and while harmony in the sizes of the dental arches is established, yet in reality we but modify one deformity by creating another." He emphasizes that the etiology is directly associated with mouth breathing and, "It therefore becomes apparent that treatment should be first directed toward the restoration of normal breathing. . . ." Thus, there seems to be little change in these basic principles, except in the age of attempting to establish normalcy to the mechanics of the respiratory processes and the time span between the two phases of treatment that he discusses. His illustrations are all showing the permanent dentition.

It behooves us, therefore, to, first properly diagnose our Class II cases. If a case is a Class I with a mesial drift of maxillary molars and premolars, it should be diagnosed and treated as such. Second, the aid of a competent rhinologist should be requested in treating the patient regarding nasal obstructions, allergic rhinitis, or any other offending contributory complications. Third, it is necessary to institute the necessary myofunctional therapy, intraoral removable appliances, intraoral fixed appliances, or extraoral appliance, to work toward the establishment of normal breathing habits and preferably correct the distoclusion at the same time.

The principle of the Oliver occlusal guide plane used in conjunction with the proper execution of the labiolingual technique is in keeping with all the effects desired in these cases (except the work of the rhinologist). The use of extraoral anchorage to produce distal movement of the maxillary buccal segments again does not change the distal relationship of the mandibular arch to the skull, but it can gain proper cuspal interdigitation, possibly allowing more normal response to the growth increments active in the mandible.

Any treatment that makes it more favorable for the child to breathe normally and have a more normal lip function certainly cannot be incorrect. Possibly, it could be that both approaches terminate at the same point. It is not difficult to feel, however, that instituting a treatment plan to stimulate any possible growth factors favorable for repositioning the mandible definitely would be in order.

Thus, we would carry the step process further:

1. Diagnose properly.
2. Obtain assistance of rhinologist, if needed.
3. Place a properly constructed occlusal guide plane with labial and lingual appliances and
4. Institute intermaxillary elastic traction.
5. Discontinue the use of the guide plane after it no longer influences the normal path of closure of the mandible or after a Class I molar relation is established in centric occlusion.
6. Continue intermaxillary elastics with maxillary labial and mandibular lingual and labial designed for maximum anchorage in the mandibular arch.
7. Discontinue elastics when lip action is normal and mouth breathing has been stopped or reduced to a very minimum.
8. Upon observing that the conditions of step 7 have continued for two months without elastics, remove all bands and appliances and place the child under observation.
9. After months or years, depending upon the individual case, replace proper appliances for intra-arch alignment and position the individual teeth, if and when necessary.
10. Place under retention or observation, as the individual case may require.

A. *B.* *C.*

Fig. 6.—Patient J. W. *A*, At 8 years of age, left occlusion before treatment. *B*, At 8 years of age, left occlusion immediately after placing the Oliver guide plane. *C*, At 8½ years of age, centric occlusion without the guide plane.

In carrying out step 9, or the second treatment phase, the extraction of dental units may even be necessary. If so, the arches should now be in a Class I relation and there is certainly no reason not to extract, if necessary, to attain a functional occlusion in a healthy mouth which is esthetically pleasing and in harmony with the rest of the patient.

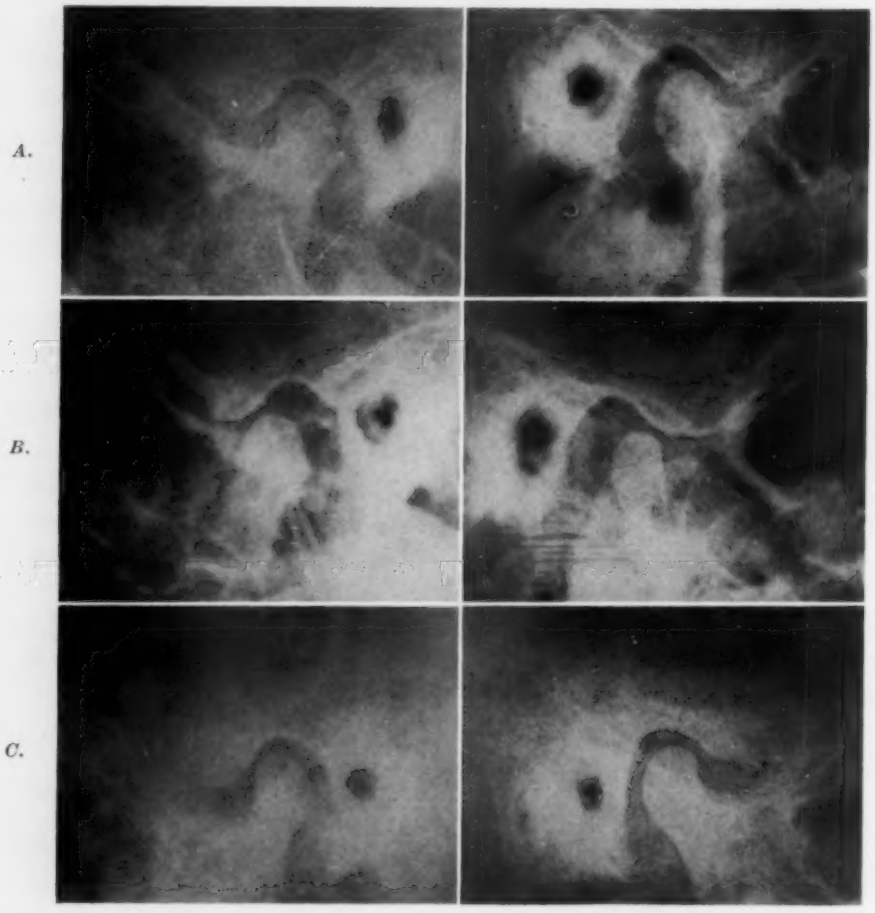
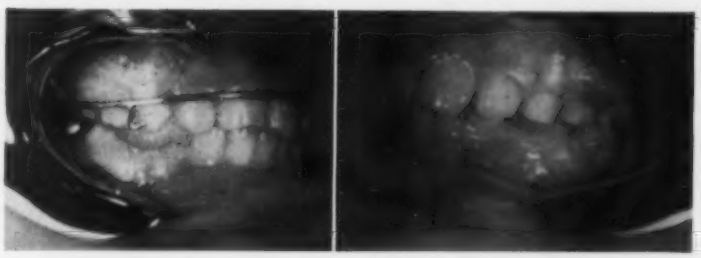


Fig. 7. Fig. 8.

Fig. 7.—Patient J. W. *A*, Aged 8 years, right temporomandibular joint before placing the guide plane. *B*, Aged 8 years, right temporomandibular joint upon placing the guide plane. *C*, Aged 8½ years, right temporomandibular joint five months later without appliances.

Fig. 8.—Patient J. W. Left temporomandibular joint. *A*, Before placing the guide plane and, *B*, upon placing the guide plane in 8-year-old patient; *C*, left temporomandibular joint five months later without appliances.

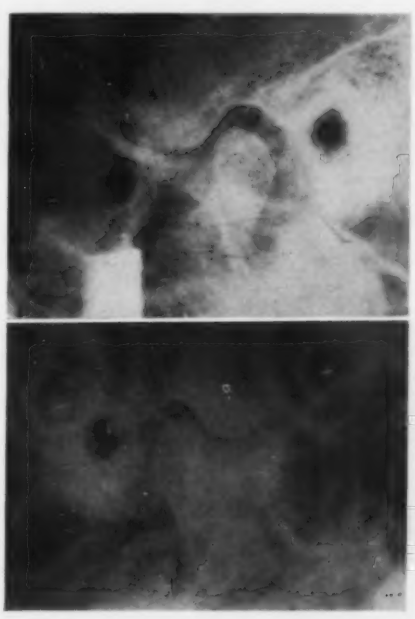
Let us observe a specific case. J. W., an 8-year-old girl, had a typical Class II, Division 1 malocclusion (Figs. 6, 7, 8, 9, 10, and 11). Five months later, a Class I molar relation was established and the guide plane was not



A. *B.*

Fig. 9.—Patient J. W. *A*, Right occlusion at time of rest position in patient aged 8½ years. *B*, Aged 9 years, left occlusion after rest period of six months (note Class I molar relationship but loss of vertical dimension).

A.



B.

Fig. 10.—Patient J. W. *A*, Right temporomandibular joint after rest period. *B*, Left temporomandibular joint after rest period.

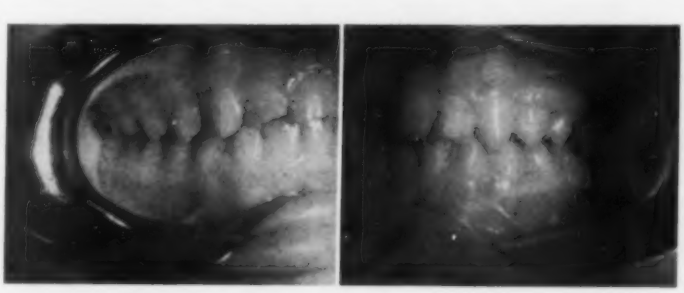


Fig. 11.—Patient J. W. Right and left occlusion after two more years of labiolingual appliances and intermaxillary elastic traction without the guide plane.

being worn (Fig. 6, *C*). After five months' treatment, the patient's profile showed a strained mentalis muscle when the lips were closed, indicating that even earlier correction would have been more desirable. The guide plane was left out and intermaxillary elastic traction was continued for three more months (Fig. 9, *A*). The appliances were then removed for nearly one year. The patient was placed back under labiolingual treatment (Fig. 9, *B*) for one year and then reached the stage shown in Fig. 11, at which time a maxillary retainer was placed. Two similar cases are those of R. B. and V. S. (Figs. 12 and 13), but these were carried to completion without any appreciable rest periods.

A. *B.*

Fig. 12.—Patient R. B. *A*, Before appliances were placed. *B*, At time guide plane was discontinued.

A. *B.* *C.*

Fig. 13.—Patient V. S. *A*, Before appliances were placed; *B*, at time guide plane was discontinued; *C*, after retention.

There is no claim that the entire response is in the ramus or condylar fossa area with mandibular repositioning. No case violates the basic rules of cellular response to stimuli. There is always some distal movement of the maxillary molars, but one should at least treat early and manipulate appliances so that this is at a minimum and the patient at least is treated in the direction of taking advantage of all possible response toward having a better chin.

If the case is a Class I malocclusion with a bilateral mesial drift of the maxillary buccal segments, it still may be treated with the same appliance

approach but with entirely different anchorage consideration. These cases, too, give far better response when treated early, and, if there is soft tissue involvement, as soon as bands can be made on the sixth-year molar is not too early to start corrective appliances. The Class II, Division 2 case usually does not have the soft tissue pressure or adverse breathing habit problem, and therefore treatment may be delayed in comparison to the Division 1. In general, the time recommended to start correction would be at age 9 to 10, or at such age that the normal expected treatment time would carry through the eruption of the premolars. This eliminates the two-phase treatment plan on these cases. Temporomandibular joint response may not be as graphic as earlier, but it still responds favorably.

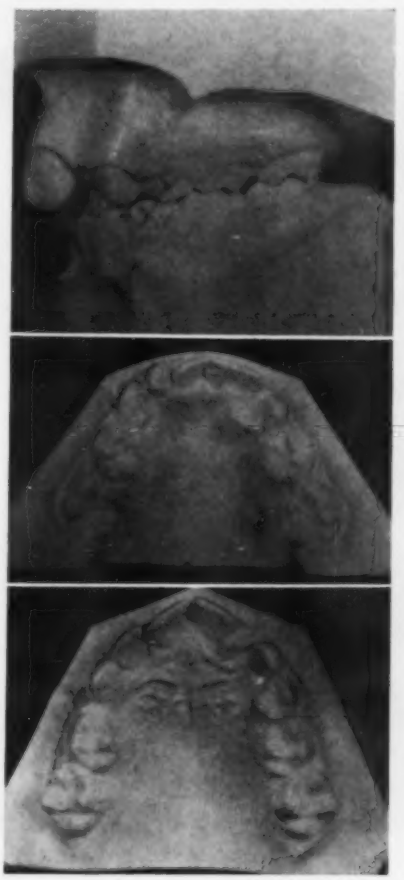


Fig. 14.—Patient R. H., aged 9 years. *A*, Left occlusion; *B*, occlusal view of mandibular arch; *C*, occlusal view of maxillary arch.

The next type of case for which appliances are recommended in the mixed dentition is the Class I with conditions that are not remotely "on the fence" in regard to the necessity of removing some dental units. These cases, when analyzed from observation with experience, gnathostatically, cephalometrically, anthropometrically, or genetically, all indicate that some extractions will be necessary. It varies with the case but, again, generally when the first deciduous molar is exfoliated, it is advisable to remove the first premolar also and to prevent mesial migration of the molars with the lingual appliances. At the same

time, the anterior teeth should be aligned, if necessary, with a labial or twin arch and the canine should be permitted to erupt in its proper relation to the skull. These cases are rare, but they do exist frequently enough to be mentioned.

An illustration is the case of R. H., a 9-year-old boy with a Class I malocclusion with conditions as shown in Figs. 14 and 15, indicating possible extraction. The assuring factor was the genetic pattern. The appliances were constructed, four molar bands were cemented, deciduous first molars and first premolars were removed, and then the appliances were placed. These cases almost always proceed according to plan and are successful cases, usually with the least possible effort.

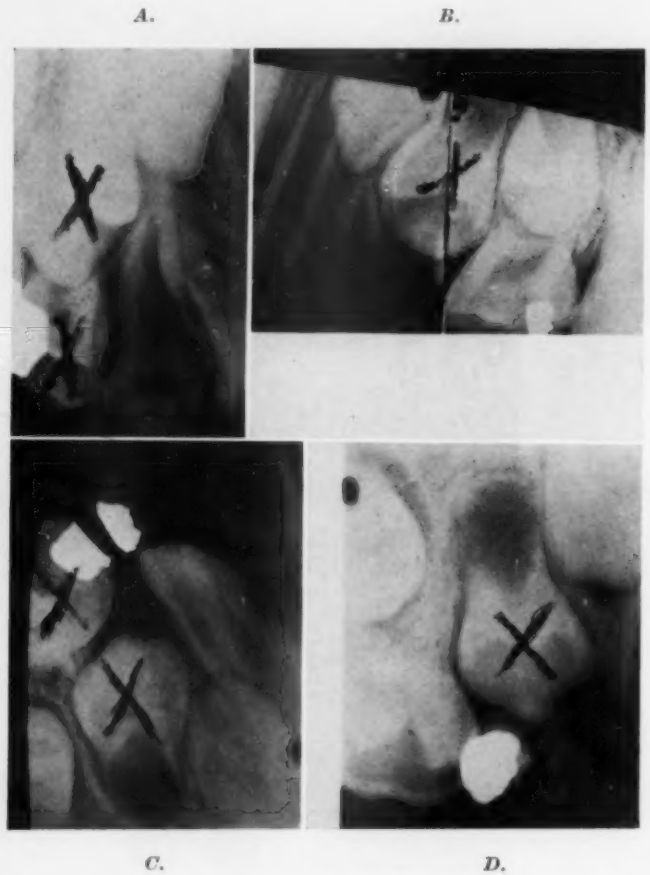


Fig. 15.—Patient R. H., aged 9 years. Radiographs of canine regions showing teeth marked for extraction.

The next type of case in which it is so frequently advised that treatment be delayed until the permanent dentition is the Class I with a slightly crowded condition. The recommended time for starting treatment of these cases is just before the second deciduous molars are exfoliated. The difference in size of the erupting premolars will allow room for some alignment; some expansion often may be gained, and arch length increase encouraged. To help retain the improvement, very early removal of third molars, if present, is recommended—possibly during the retainer stage of these cases.

It is felt that this is the time for us, as a profession, to make a general plea to state school board officials for even premalocclusion speech training of many tongue habits and minor speech defects. These may be recognized easily as early as age 4. It seems that it would be proper for our teachers to attempt the recognition of these cases at the kindergarten or first grade levels. Speech training would possibly keep many from becoming orthodontic patients later, again by avoiding incorrect soft tissue influences on the direction of growth.

SUMMARY

Treat as early as possible any case that has correctable factors existing that, if allowed to remain, will continue to affect the case adversely, be it hard or soft tissue. This, then, would be the Class III and Class II, Division 1 malocclusions, anterior and posterior cross-bites, and habit-correctable cases. Another way to decide upon whether or not to treat very early is to determine whether the answer to the following questions is "yes":

1. Is basic skeletal structural pattern incorrect?
2. Are existing conditions and habits likely to allow this incorrect pattern to remain as is or become progressively worse?
3. Can treatment make a favorable change in either the habit, the condition, or the structural imbalance?

If the answer to all these is "yes" and the interest of the patient is paramount, treatment may be instituted as early as is practically favorable or even as early as, in the case of one of our youngest patients, 17 months of age.

When the answer to one of these questions is "no," there may be definite reasons to postpone treatment until later. By "later," until the loss of all deciduous teeth still is not intended, but until the age of 6 to 10 years. In conversation with the parents of a child, when you wish to wait before starting treatment, extreme care should be taken to get across to the parent that your advice is only for that child and his particular condition. Around the bridge table they will say, "Dr. Grimaldi said he wouldn't start Joe until all the permanent teeth were in." The mother sitting across the bridge table may have a 7-year-old child with a Class III or Class II malocclusion. Please get it across to the parents that you are glad to see the child early because so many children require very early correction but that correction of this particular condition may be delayed until such and such a time.

When the stage of dental development has reached the exfoliation of the deciduous molars, the Class II, Division 2 cases without soft tissue problems and the definite extraction cases of Class I should be started. Just before the loss of the second deciduous molars, the Class I cases with slightly crowded teeth should receive attention.

It narrows down to the conclusion that the only cases in which appliances should not be placed in the deciduous or mixed dentition are the following:

1. Those that do not come to your office until after all the deciduous teeth are lost.
2. Those that seek your advice but, in your opinion, may not require orthodontic care.

3. The Class I cases with a slightly decreased vertical dimension. They may open somewhat when the molars shift upon the loss of the second deciduous molar.

4. The Class I cases with spacing, but normal lip action.

5. Some mutilated cases of all classes.

6. Cases that you cannot correctly diagnose, sensibly treatment plan, and prognose to a successful conclusion. With these, do like the physician. In effect, give the patient a laxative (that is, casts, radiographs, and conversation) and have him return when the symptoms (that is, malocclusion) are more easily diagnosed. The cold may be worse (pneumonia or extraction), but at least it can be diagnosed and a treatment can be planned for it.

If each portion of the complex phenomena of growth took place independently, it would make them so much more easily understood. Mother Nature, however, is not limited by what the human mind can grasp. All we can comprehend are a few variables at any one time, sketchy, as presented here. Physiologic processes and growth are not so specific or sketchy. If we recognize this tremendous complexity and plan our treatment to best utilize the few variables and encourage the growth factors we can comprehend, we are well on the way to avoiding the errors of faddists or cultists who credit all successful treatment to this or that source of pressure.

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INVESTMENTS FOR DENTISTS

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THIS is a rapidly changing world in which we live. For example, the Pyramids are approximately equal in structure to the Hoover Dam; still it took about 1,000 times more man effort to build the Pyramids than it did to build the Hoover Dam.

It is quite conceivable that this 1,000 to 1 ratio could be applied to our profession; in other words, that 1,000 dentists are making investments in "Pyramids," or poor investments, to one who is making investments in "Hoover Dams," or good investments.

The purpose of this article is to try to present a way to cut that ratio by the use of sound methods of investing and trying to bring some system out of the chaos of dentists' investing. Today dentists make money fast, compared with the days many of us remember, but, if they invest it comparatively as fast as they make it, those dentists and their money will soon part company.

For the sake of ease of explanation, the field of investments for dentists may be divided into thirteen main types, with some subdivisions under the main types.

Investment No. 1, Your Office Equipment.—It matters not whether the equipment is new or old, or includes a practice; the basic principles of investments and the handling of said financing remain the same.

The ordinary method of financing the purchase of dental office equipment is by contract, with monthly payments commonly called "installment plan" payments. This method should never be used because, as a basic idea of investment, it is a wedge leading to an investment principle that can lead to 1,000 failures to one success. Never use the installment plan. No installment plan contract that I have ever seen or heard of carried less than a 9 per cent interest charge, and some run as high as 20, 30, or 40 per cent. Most will run better than 12 per cent. Yes, it is there, disguised as carrying charges, insurance charges, registering charges, bookkeeping charges, contract writing charge, insurance against loss charges—all in small print, but it is there.

Read before the American Association of Orthodontists, Chicago, Illinois, May, 1954.

†Deceased. On Sept. 5, 1954, while crossing the Klamath River in a rowboat following a day's fishing, Dr. Vernon Hunt and his two companions were drowned when their boat tipped over. Dr. V. Everett Hunt adds the following quotation from his father's writings: "When that pillow of forever slumber is placed beneath my head, the many friends of mine in dentistry will soften that pillow, and, if I have helped a lot of you a little and a few of you a lot, I know the long, long journey beyond will be cushioned by the thought that in a way I have returned a little of the pleasure that the profession of dentistry has given me."

"Well," you say, "what should I do? I must buy on the installment plan because I have no credit." How do you know that you have no credit? Have you gone with your father or some relative or close friend to a bank where he has done business, and had him introduce you to the president or vice-president of the bank? And then have you carefully explained the situation to the banker, not in the way a sick dog or a weakling would explain the matter of a business loan, but in a straightforward, confident, businesslike manner with a keen understanding of how much you should earn in a year by a fair comparison and understanding of what other good dentists in the city or community earn?

The banker may not, and probably will not, tell you that he is quite familiar with what dentists earn in his community but, whether he tells you or not, he knows; and he knows whether or not you are telling the truth. So, know what you are talking about; make no wild, untrue, or unfounded statements about finance to a banker. It will be held against you forever. The banker probably will try to sell you on the installment plan, because that makes money for his bank, but stick to it. Convince him that you want a straight loan. You do not want to meet any exact monthly payments. You want to pay it off as quickly as you can, get rid of the interest charge, and get ready to make some other investments. If he is still tough, remember you probably have, or almost have, a wife. Get her, her father, or her rich uncle to sign your note. Get that money for 5 per cent—not 12, 20, or 40 per cent—and pay it off just as fast as you can, thereby establishing good credit, a business rating, and a borrowing power.

This first borrowing is stressed forcefully because it is so terribly important.

By insisting on a straight business loan, you are establishing yourself in your city or community as a businessman, not as just another dentist-sucker. You are definitely establishing your credit and your right to fair treatment as a businessman of the community or city. No installment-plan payer will ever establish a good credit rating anywhere, but he will establish a "sucker rating" in the eyes of all businessmen. Let us examine what the difference is in money to you and let us be thinking in terms of what are we working for. Why do we go to the office at 7 or 8 A.M., often stay without lunch, and probably have a late dinner? It is to make money to use to pay our bills, to have a few of the things we have always longed for, and last, but by no means least, to make money so that someday we can take it a little easier and do all those things that we have been dreaming of all our lives. Then, why be such imbeciles when it comes to handling this hard-earned money that it is lost or given away!

Why does use or nonuse of the installment plan in equipment financing make so much difference in a dentist's over-all investment program? Just suppose your office equipment and all its ramifications totaled an investment of $12,000.00. I am just arbitrarily taking $12,000.00—and it is quite a fair figure—for a two-chair office, x-ray equipment, business office, floor coverings, and a nicely appointed waiting room. (Take any figure you wish, but work it

out the same way.) Then, $12,000.00 at 5 per cent interest is $600.00 per year interest. Pay the principal as fast as you can, thereby reducing the interest charge.

Now, suppose you take an installment-plan program that runs up as high as 33⅓ per cent. At 33⅓ per cent, your interest will be $4,000.00 per year, or $325.00 per month, so there is a saving here of somewhere between $50.00 and $325.00 per month, just in this one item of investment and one that you all have to make; and this is not the total savings by any means, because this method of investment will lead to many, many similar mistakes, and probably more expensive ones.

Let us examine this installment thing another way. Ask yourself what you are trying to do when you use these "pay-in-the-future" methods for something you are wearing out today. The article is getting worth less and less each day and each hour, and it is costing you more and more each day and each hour, not only in interest, but also in upkeep.

The real question is: Just what are you trying to do when you buy on the installment plan? You are trying, in cold-blooded, plain language, to do something no known human being has ever been able to do—predict the future. You are giving odds of better than two to one that you are right, 10 per cent against 5 per cent that you are right.

Investment No. 2, Insurance.—I am talking in this instance of insurance only for protection of one's dependents and, of course, his indebtedness. I am speaking of straight life insurance or term insurance because that is the cheapest and best for this one particular idea of insurance for protection.

Investment No. 3, The First Automobile.—The No. 3 investment for dentists is something that should not rate third. In fact, it should be almost at the bottom of the list, as it is not an investment in any shape or form. It is an extravagance. It, more than any other one thing, is directly or indirectly the cause of the failure of dentists ever to be able to retire. Because you are going to buy it anyway, it might as well be discussed right now. The automobile is not a bad thing; in some ways it is almost a necessity, but never is it an investment for a dentist. When I say to buy an automobile as your No. 3 investment, I do not mean that you should buy a Cadillac. I do not mean for you to buy something far beyond your means, or to buy one every time the automobile manufacturers change the grill-work or move the button they flick the lights with. It is said by leading automobile men that there has not been a major change in automobiles for twenty-five years. How many times have dentists bought new cars because the chrome has been changed a little on the outside or the new models have been painted in two colors?

A dentist works in his office eight hours, ten hours, even twelve hours a day, and if he is trying to be a success he is not only working eight or ten hours in his office but he is spending his lunch hour making acquaintances, talking and thinking dentistry. He is probably going out in the evening nine times out of ten because he thinks it will help his practice. He is living dentistry twenty-four hours a day. He is working at it in his office eight or ten hours a day.

I can remember when I was 26 years of age. I had been fairly successful as a dentist in a relatively small town, and automobiles were my thrill and joy, or at least I thought they were. I bought a beautiful red sport model Cadillac for $4,700.00, when money was money and automobiles were, just as they are today, merely conveyances. I used to get out early in the morning so that I could get the parking place right in front of my office where I could look down on it. It took me about three, maybe five, minutes to drive from my home to my office. Of course, it would have been much better, from a health point of view, had I walked. After working eight or ten hours in my office as hard as I could work, I would come out of the office, step into that car, put my hands on the wheel and my foot on the starter, and swell up to where I could hardly stay behind the wheel. In my own imagination, I felt that everybody was looking at me and, by the mere fact that I owned this beautiful car, realized that I was a successful, prosperous dentist. A few years afterward, I accidentally found out what they really thought! One of my very good friends was the president of the opposition bank. He was a very successful man who owned a big car and had it paid for. We played golf together and one day, some two or three years after I bought my car, he told me on the nineteenth hole of the golf course what he thought of me, what my patients thought of me, and what the townspeople thought of me; and for the first time I realized what the other fellow thought about me and that big car that I could not afford. He said, "You think that people think that you're a prosperous, successful, well-to-do dentist and citizen. What the people think, though, is that you are a first-class fool and don't know it. Just a ridiculous fool when it comes to investments." I analyzed it, finally, this way. I worked eight or ten hours daily to make some money, denying myself many of the conveniences of a modern dental office (the best investment for any dentist). There are always new things in dentistry and dental equipment that could be used to the advantage of the operator for lessening his hours of toil, for making it more convenient and more pleasant for him to work, and for lengthening his years of production. I denied myself these things, and for what? I was working eight or ten hours a day in the office for fifteen minutes a day in a $4,700.00 automobile. It is a matter of record that most dentists do not average one half-hour a day, year in and year out, in their automobiles.

I have just finished examining the contract of a man who is buying a $7,600.00 Cadillac. He is making a down payment of $2,000.00, and paying for the rest of it at, roughly, $200.00 a month for thirty months. The interest, registering charges, and so forth on this deal come to 13 per cent, and that is the smallest part of it. I have checked with second-hand car dealers and they tell me that by the time this car is paid for in thirty months this man will be fortunate if he gets better than $2,000.00 for it. That will leave $5,700.00 depreciation for two and one-half years, or practically $200.00 per month depreciation.

You cannot own any kind of automobile for less than $200.00 per month, and if you go up into the Cadillac class, you probably will spend from $400.00 to $600.00 per month. Now, if you will stay in your own class, the class you

should stay in if you intend to retire at any reasonable age, you will save from $200.00 to $400.00 per month.

All that I ever saw the big automobile do is make a man's head swell to where—if he had any business judgment at all—he entirely misplaced that judgment or figured wrongly when he was purchasing an automobile or anything else.

There is practically no hope, financially, for the dentist who buys one of these big cars each time he turns around, before his financial picture is secure. He is just a financial idiot.

Investment No. 4, Your Home.—In listing this fourth investment, I do not mean installment plan home buying. I mean you should purchase a reasonable home with a reasonable down payment and then borrow the rest of the money from a bank, an individual person, or some other lending institution, at the proper rate of interest (4 or 5 per cent) for a period of years, and not on any monthly payment plan. The value of your home should be figured at two and one-half times your net income for one year; be sure that this is your net income and not your gross income.

If you have two or three cars, you should deduct those as an expense and not get them into your net income. Two and one-half years of your life is enough to pay for your home.

If you follow my instructions on the home, you will save somewhere between $200.00 and $800.00 per month. It is not only the initial price of that big home that costs you money; it is the price of the upkeep, the extra help that it takes to maintain it, the painting of the outside of the house, the upkeep of the inside, the cost of the upkeep of the grounds. All this costs more money today.

In recapitulating, on your office you will have saved, if you have followed the suggestions I have made, somewhere between $50.00 and $325.00 per month; on your automobile, somewhere from $200.00 to $400.00 per month; on your home, somewhere between $200.00 and $400.00 per month. Totalling these figures, we find that you have saved somewhere between $450.00 and $1,125.00 per month, not actually by your saving, but by better business methods.

Investment No. 5, Insurance, Annuities, Investment Trusts, or Bank Trusts.—I suggest that you take this amount that you have saved (somewhere between $450.00 and $1,125.00 per month) by better business methods and start buying yourself an income with that—a fixed income, starting with age 65.

Suppose you buy yourself a $200.00 per month fixed income, starting with age 64 back toward your present age. If you have saved $600.00 per month, then you can buy three months with your first month's saving. In four months you have bought an entire year's income! Before you know it, you, growing older, will meet your income coming down the ladder, 64, 63, 62, etc. Then, if you are still healthy and of the opinion that you would like to double this amount, would like to make this $200.00 into $400.00 per month, start at the

age of 64 again, using the money you are now getting on your income, plus your continued savings. Thus, you will be guaranteeing yourself $400.00 per month.

This guaranteed, or assured, income can be done with an insurance company, trust company, or bank trust. I personally would suggest the trust department of a bank, because in it there is an opportunity for you to learn something about investments, for one thing. Another thing, in a bank trust you can set up any kind of program to be returned to you. You can arrange for a definite amount of money each month, called a "fixed trust," which neither you nor any of your relatives can break, no matter what happens (in other words, you could go as crazy as you wanted to, and you still would receive only the fixed amount for which you had arranged with the bank); you could have a trust wherein you could change the amount of money every day, if you wished to; or you could leave a certain amount to be used for the education of your children, to be delivered to them at a certain age. All these things can be arranged with an insurance company, too, but the return of interest is greater with a bank trust than with an insurance company.

Investment No. 6, Own Your Own Office Building.—This is not a possibility for every dentist, but it is a far more popular investment and a far more satisfactory investment than most dentists realize. By owing your own office building, not only can you provide yourself with the finest kind of facilities for the practice of dentistry; the finest kind of working conditions; the finest opportunity of protecting your health and insuring a longer, happier, pleasanter, and more desirable and efficient opportunity of practicing your profession, but, you can also make it a paying investment. You know that you are your own best creditor. You know that you are going to pay your rent; also, you know that you are not going to move out and create a vacancy. When building your own office building, plan on depreciating it out during the active years of your practice; I would like to see that not over fifteen years.

Investment No. 7, Government Bonds or Other Good Tax-Exempt Bonds.—There is a great deal to be said about bonds and insurance during periods of inflation, but at least you will get back the number of dollars that you put in. Maybe they will not buy as much but, on the other hand, if sound business principles are adhered to in government, the buying power could improve, so possibly some gain may be made in the future.

Investment No. 8, City Income Real Estate.—You must understand this type of investment, or be willing to learn, to make it practical and, if you figure your return on a 1½ per cent per month basis before taxes and insurance, you will come out all right.

Investment No. 9, Country Income Real Estate.—By country income real estate, I mean real estate which brings in an income or return of at least 1 per cent per month.

Investment No. 10, Stocks.—This brings up the stock market. My experience in the stock market has run over a period of thirty-seven years and has been very satisfactory and successful indeed.

The stock market: The stock market is a place where stocks are bought and sold, and as long as you keep it just that—a place where you can buy and sell stocks—you are not likely to get hurt.

You must be sure, however, that you are doing the buying and selling, and that you are not being sold stocks and being told when to sell your stocks. Salesmen make a commission every time you make a sale or a purchase. That is how they make a living. Not only do they make a commission, but they might wind up selling you some very worthless stocks at more than their market price.

Investment for income, not appreciation in value: Appreciation is secondary; the important thing is safety of principal and regularity of dividend or income.

You do not sell your home, your car, or your office equipment every morning. Why, then, figure on selling your stocks every time they go down and then buying them back again every time they go up? Buy good stocks, after careful analysis, preferably growth stocks, that is, in companies that are growing, preferably in a growing industry and in a growing community.

Buy for income, and if the stocks do increase in value that is fine, but remember that the important thing for most dentists is income and safety of principal, that is, until they become worth so much that they must think of capital gains, and those who fall into that bracket do not need my help.

The important thing is income and safety of principal, not how much the stock is worth each evening and each morning. This thing of discussing with your wife at the breakfast table, over the morning paper, the value of your individual stocks as to how much you have made or how much you have lost the previous day is, in my mind, a total mistake for the great majority of dentists. Remember, you are interested in safety of principal and continuance of income and not in what the general public and your wife think of your stocks.

Actually, if you were to discuss the value of your house, your office equipment, or your automobile at the breakfast table every morning and were to sell it on the same basis that most dentists sell stocks when they are down, you would find, if you have selected your stocks well, that there probably would be less fluctuation in the price of your stocks than there would be in your house and equipment. So, use the same methods of purchasing and selling for your stocks as you do for your home and office equipment.

First things first: For the sake of explanation, let us divide stocks into two definite groups: those that are listed on an exchange and those that are not listed, in other words, listed and unlisted stocks. A listed stock is one that has met the listing requirements and has been accepted for listing on one of the stock exchanges. Again, let us explain that all exchanges have different listing requirements; the most stringent exchange of all is the New York Stock Exchange. It requires certain bookkeeping methods, certain reg-

ularity of statements of assets and liabilities, and a great many more requirements, all for the benefit and protection of the stock purchaser. (You may be interested in learning that the man who master-minded the many stock controls that you now have the advantage of was the same man who put into being the bank deposit insurance program—Herbert Hoover.) It would not be a bad idea to confine your purchases to only stocks that are listed on the New York Stock Exchange, particularly if you are a newcomer to the stock market.

Commissions: As for commissions paid brokers for transacting a purchase or sale for you, the rate is somewhat the same on all exchanges. The commission, or brokerage fee, as it is often called, roughly goes like this: for 100 shares or more, the charge is between ¼ and ½ of 1 per cent; for less than 100 shares, it is considerably more—but not any great item, even at that.

This seems a good place to explain what is ordinarily called "an odd lot." An odd lot is a transaction of less than 100 shares of any one stock.

Margin: You probably heard a lot about buying "on margin." This is when you pay down a certain percentage of the value of the stock, with the rest to be paid later. The stock is held as security and is in the name of the brokerage company with which you are dealing.

If this stock that you bought is advancing in price, everything is fine on a margin account, but suppose stocks go down (and they do, in fact, just about as often as they go up). Then you are either called upon for more money on very short notice or, if you cannot raise the money, you are sold out and you naturally lose all, or the greater part, of your investment.

In the past, it was possible to put up 10 per cent of the value of the stocks you were purchasing and the 90 per cent was margin, or borrowed money. Of course, the advantage was that for a small amount of cash you could purchase a large amount of stock, as with $1,000.00 you could purchase $10,000.00 worth of stock. Now, however, the Government has changed this, and you must put up 60 per cent margin on the best exchanges.

Now, let me tell you about a dentist who was dealing on margin in 1931. He happened to be a personal friend of mine who had practiced dentistry very successfully for thirty-odd years. He had practically never bought stocks in his life until one of our banking concerns began energetically selling its stock. My friend had saved up, from his practice and from frugal spending, a little over $100,000.00—enough, certainly, if properly invested, to keep him comfortably the rest of his life. He got interested in the stock market, however, without sufficient knowledge of stocks and stock market procedures. He started with a small purchase of this bank stock and as he became more confident he bought more and more until he had put every cent he had, or could muster, into this stock. He bought on margin, as narrow a margin as he was allowed. He pyramided his stock (by that I mean that every time he bought more stock he margined the stock that he had before to buy the additional stock, then he margined that stock to buy more stock, and margined

that which he had just bought to buy more stock), and in a matter of about two years he ran his present stock paper worth (notice I said "paper worth," because he did not sell any) up to a little over one-half million dollars.

He practically cut out his dental practice and, although a very conservative man, was listing himself in his own mind as a possible millionaire. The day that bank stock price broke, I saw this man from the window of my office. He started a block down the street and walked cornerwise up through traffic through the middle of the street to the bank on the other end of the opposing block, as I say, right through the traffic; he was in a complete haze, and well he should have been, because that day he was sold out—absolutely wiped out. He had lost every cent and had a big mortgage on his home as well.

He tried to go back into practice and did make something of a stab at it (although a very young-appearing man with a young family, he was 60 years of age). A year or so after this, he went to his oculist for an eye examination. He had begun to see two teeth in the place of one, although he was not at all disturbed about it, thinking only that he needed new glasses. The oculist told him that he was considerably perturbed about his condition and would like to call in a specialist, which, after a great deal of discussion, was done. The dentist was sent to San Francisco, within a period of some thirty days, to the best specialists in the country and he was operated on for what was thought to be a brain tumor. It turned out to be a malignant type. He lived approximately one year, under very painful and uncomfortable circumstances. A fine, high-caliber type of man, this dentist never smoked or drank, always belonged to his dental association, and was very ethical. Still, he was a sucker when it came to investment, and he left his family practically destitute. His was another pitiful case of poor financial management, and I think, a fine example of margin buying.

To sum up what I have said so far. The stock that you are going to buy is going to be listed on the New York Stock Exchange from a brokerage house that is a member of the New York Stock Exchange. It is going to be in a growing company in a growing community and, with at least a twenty-year dividend record, it is not going to be on margin. You are going to buy it, pay for it, and have the stock certificates in your own name and in your own safe deposit box. Never leave your stock certificates in a brokerage house or have them in the name of the brokerage house. They should always be in your own name and possession. Do not let anyone convince you otherwise. You are not going to try to anticipate the future.

Preferred Stocks and Common Stocks: There are two basic types of stocks: (1) common stocks, and (2) preferred stocks. Both could be in the same company, naturally.

First, I will explain preferred stocks. A preferred stock has a preright to the assets in case the company goes broke or is liquidated. It has a previous right (and this is why it is called *preferred*) to a definite percentage of the profits of the company. The preright is usually a limited right, limited

in many ways. A preferred stock is usually callable by the company, which is naturally the will of the majority of the common stockholders, and it is callable at a definite price, say for the par value of the stock, which we will say is $100.00.

For this privilege of being called, the callable price is always in excess of the par value. That is, it is callable probably at $105.00, $110.00, or $115.00, and so forth. This feature is distinctly a disadvantage to the preferred stockholder.

There are two interesting and advantageous angles to some preferred stocks.

First, many preferred stocks have a cumulative clause and they are called *accumulative preferreds.* Accumulative means that if the dividend for any reason is omitted, it accumulates and must be paid sometime in the future before a dividend can be declared on the common stock. This feature provides a very interesting speculation in many cases. Suppose, for instance, that this preferred stock gets behind in its dividend, say, $10.00, $20.00, or $75.00. At the same time, it is possible that the stock will be selling considerably below par. Practically speaking, if the dividend is not paid on time people become uneasy (that breakfast table thing again). Although the omission of the dividend possibly may have been a very smart financial decision for the company and actually should have caused the stock to rise instead of deteriorate in price, in most cases the rank and file purchaser will consider the omission of the dividend as a sign that the stock is no good. Psychologically, it is bad and at the breakfast tables a lot of people will get scared and sell the stock, forcing the price down still lower. Never follow the masses; they are always wrong. Remember the old motto, "Buy cheap and sell dear."

Second, this preferred stock can be a *convertible preferred.* This means that the preferred stock is convertible into common stock on a definite basis—say, for comparison, one share of preferred for ten shares of common. To explain, in a company that is growing, the common, we will say, was selling at $10.00 a share when the preferred stock was issued (remember, the preferred was issued at $100.00 a share) and the common has now advanced to where it is selling on the market at $50.00 a share. Then, if you convert your one share of preferred into ten shares of common, you would have a $500.00 value, or $400.00 profit.

Now, to sum up, you could have an accumulative, convertible preferred stock. There are many of these on the market, for example, Armour and Company, 6 per cent accumulative convertible preferred. It is listed on the New York Stock Exchange. It is selling in the low 80's; par value, $100.00. Here is probably a good place to explain "par value."

Par value of a stock is the price that the board of directors of the company arrive at by taking all the assets of the company into consideration. It has very little to do with common stocks, but in preferred stocks it is a definite

thing. In the case of the stock that we are referring to—Armour and Company, 6 per cent preferred—the 6 per cent is 6 per cent on the par value, not the selling value, of the stock. It is 6 per cent on the unit value, which in this case was $100.00.

This stock was $13.00 in arrearages in its dividends, it is callable at $115.00; convertible into common, one share of preferred for six shares of common. It is the next to largest meat packing company in the world. I saw this company's preferred once with over $50.00 in arrearages and the stock was selling for $20.00 a share. They have since paid off the delinquency and have again become $13.00 delinquent. I just cite this as an example.

A common stock is the basic investment in the company. It may or may not have a par value, and in recent years most common stocks do not have a par value. The value is arrived at by the assets of the company. The number of shares of the company divided into the total assets of the company naturally gives the approximate book value of the stock.

If everything is done properly, the exchange wherein the stock is to be listed accepts the stock for listing at the figure set, and then, for the time being, that becomes the trading value of that stock. Time will tell whether that value will remain the trading value or whether it will change.

This might be a good place to emphasize a "No! No!" in stock dealings and to make it a little tough for the stock salesmen of fake companies, or companies of doubtful futures, the out-and-out swindlers, and also to explain the stock of a new company and additional issues of old companies. It is a good spot to take you off one segment of the stock "sucker list." My explanation of "syndicate," I believe will do this.

Syndicate: By syndicate, in this case, I mean a group of companies who are interested and associated together for the express purpose of floating (selling to the public) either a new issue (new issue meaning an issue of stock of a brand new company) or an additional stock of an old company. The mechanics of floating this additional stock are these, simply expressed: The companies in the syndicate put up the amount of money to purchase the stock from the issuing company, plus an additional amount of money that will be used to support the market. This support of the market means that the syndicate will buy all stock offered at a price below the price at which the syndicate is offering this issue. Any new issue of stock, good or bad, is a depressant upon the market, for many reasons. First, the new issue of an old company means more shares, thereby splitting the net income. Second, it means more shares of this particular company's stock on the market; therefore, there must be more buyers. Third, a larger broker's commission, multiplied many times, is charged for the sale of these new issues above the regular ordinary buy-and-sell commissions. That is, the ordinary commission is, say, ⅛ of 1 per cent, a new issue may carry two or three full points on the new stock.

Now, add to these lowering pressures a weak market. That is, a general market that is going down, a so-called "bear market." This is a good place

to explain that a bear market means a bearing down, receding, lowering in the general market averages. Not only in this type of market could this stock easily lose two or three points brokers' commission, but it conceivably could lose, temporarily at least, two or three times these two or three points, that is, as soon as the support of the syndicate is withdrawn and the stock has to seek its own support of supply and demand, the stock is very likely to go down. For every seller there must be a ready and willing buyer. What I am trying to say is this: Do not buy new issues while they are still in syndicate. You practically never can lose by waiting. Let the professionals and seasoned traders settle the price. Do not try to beat the other fellow at his own game.

Information: Now, let us think a minute about stock market information. First, always deal with a reputable house and, for the same reason that we have selected the New York Stock Exchange for your stock listings, we will select as your brokerage firm a member of the New York Stock Exchange.

Where can you get information on a given stock and what shall you do with it? Information on any worth-while stocks is obtainable from any reputable brokerage house. There are many different services that put out this same information in a digested form. Two of the most popular and best recognized sources of information are "Standard and Poor" and "Moody's."

You should never buy any stock until you have read all the information available on that stock. You should check, for a twenty-year period, the following: its growth record, its dividend record, the amount of stock outstanding, and the price range of the stock.

You might complain that this is too big a job. Surprising as it may seem, you can read all this information on any one stock and quite thoroughly digest it within thirty minutes. Do you not think it is worth thirty minutes of your time to know for yourself, not from some salesman but from a matter of record, what this stock's record is? No man should go into the stock market unless he is willing to make some contributions in time.

I think it would be well for anyone going into, or already in, the stock market to subscribe to *The Wall Street Journal.* That is a daily publication that has the quotations of all the leading stocks and stock exchanges and other pertinent business and stock information. It is a very fine business paper and should be read every day. Sometimes you may read only the headlines, but it will keep you abreast of the financial and business world. I also believe that any man who is going to buy stocks should avail himself of one of the many financial services—and there are many of them—such as Babson's, Brookmire, United Business Service, Value Line, or any of the better ones. This service gives you definite information, not only about individual stocks, but also a short digest of the condition of the market. It is usually a weekly report and can be read in a very few minutes. Above that, and this is a very important angle to a service, you can ask them to analyze any individual stock for you. They do this for a very small charge, or even free of charge. This stock could be one that you are contemplating buying or contemplating selling or one

that you are contemplating keeping but would like to keep up to date on. They have men that are trained in looking up this material and they have available to them libraries of information on all the worth-while stocks. It saves you time and probably will save you a lot of money.

Remember, the decision as to whether you are going to buy, sell, or keep a stock should always remain with you. Read all the information and make up your own mind. Again, I say, never take a salesman's opinion and do not expect one of those statisticians to be always right. As I have stated about salesman, if he were always right, he would not be working at figuring out statistics.

After you have availed yourself of every bit of information about this company, do not rush. You have plenty of time. Do not try to be a "trader." A trader might be a tape reader, he might be a volume reader or beater, or he might be one of 100 other types of traders that buy in the morning and sell in the evening and try to hit the bulges or short-sell the stock if they think it is too high. Here, I might explain what selling stock short is.

Selling Short: Selling stock short is selling it with the anticipation, for some reason or other (either because of the general market condition or because of this individual stock), that the stock is going down. The trader borrows stock and sells it in the anticipation of replacing the stock later at a lower price. It is a very risky business because it does not take into consideration the thing I have been trying to instill into your minds; that is, buying only for safety of principal and continuance of income. The short-seller has no interest in either of these basic principles of investing that I have set up for you to follow.

Investment No. 11, City Nonincome Real Estate.—I recommend that you do not buy any of it unless you are versed in this type of investment.

Investment No. 12, Country Nonincome Real Estate.—As in the case of city nonincome real estate, my advice is: do not buy it. There are too many things better unless you know what you are doing.

Investment No. 13, The Second Automobile.—I heartily make this thirteenth and last recommendation without any reservation except that you have set up an investment program that will sufficiently take care of you as long as you live, a program that will prevent you from becoming the poor old dentist with a hump in his back and a hitch in his walk, with one shoulder about a foot higher than the other, his eyesight terribly impaired, who hobbles down the street in his home town, nervous and feeble, dependent upon his relatives and friends, and of whom his good old friends say, "There's poor old Doc. He was a fine fellow. He worked hard. It's too bad. Isn't it a pity? He hasn't a cent out of all the money he made. He was a sucker for fakes and fakers and salesmen. It is a pity, and isn't he a pitiful sight?"

After you have established this program that will see to it that you never can become that hump-backed, jittery old dentist to be pitied and to be dependent upon his friends and relatives and his government, after you have

solidly established that you will not fall into that category, then you are ready for that thirteenth choice of investments—your second automobile. They make them in Detroit faster than you can ever buy them.

SUMMARY

First, give yourself the finest dental equipment that the market affords, and keep it modern and in good repair. It is your best investment.

When a dentist has earned $1,000.00, he has worked for that money. It is his and his alone. As a comparison, when a dentist buys a piece of dental equipment (a chair, for instance) he expects the chair to perform all the acts it was designed to do.

Now back to the $1,000.00. The dentist has bought and paid for that $1,000.00 in hard work. Now he wants it to work for him. If its only work is going to be to pay off back installments or forward installments on something (an automobile, for instance), which is getting worth less every day and every minute, or to pay off "Pyramids" (faulty investments), then that $1,000.00 is wasted. It becomes a liability instead of an asset. The dentist has gotten himself on an endless treadmill or an escalator. He goes up a little way, then right back down. In other words, he is getting nowhere financially, and many times does not realize it.

Now, what should that $1,000.00 that the dentist has earned do? It should go to work for him and start to take the load off his tired shoulders. It should start producing. Let us say, for instance, that the $1,000.00 should produce the equal of five minutes of the dentist's time—not for one day, one week, one month, or one year, but for the rest of his life. Continuing the deduction, then, $12,000.00 should replace one hour of the dentist's time for the rest of his life. Eight times $12,000.00 is $96,000.00, and that should replace the entire eight hours of the dentist's time for the rest of his life. Call this $96,000.00 an even $100,000.00 for the ease of figuring. As the return was at the rate of 6 per cent, it would be $6,000.00 a year, or $500.00 per month, for the rest of the dentist's life, without his lifting a hand. There would be no office expenses, no hired girls, no patients to worry about, no collection problems, and no personalities to have to coddle.

What I am trying to point out is that the dentist worked for the $1,000.00 and we now put it to work for him, instead of the dentist working on and on like the 4-year-old child laughing and riding up and down on an esculator. Unlike the little child having fun, the dentist is not having fun; he is not laughing. Instead, he is a laugh, and the ones who are laughing are the fellows who are loading him with the worthless so-called investments.

I said that I was going to offer a program that would retire you in ten years. That I have already done.

In addition, suppose you save $500.00 per month and invest it as I have suggested. Five hundred dollars a month for one year is $6,000.00; for ten years, that is $60,000.00.

Money doubles at 6 per cent interest in nine years. If you will follow the suggestions I have made, you should have at least a 6 per cent return, and probably will actually be closer to an 8 per cent or 9 per cent return or income.

Any way you figure it, you should have $100,000.00 plus in ten years by saving $500.00 a month. If you save $1,000.00 and invest it as I have suggested, in ten years you should be crowding $200,000.00.

707 Eye St.

Editorial

Since the last meeting of the American Association of Orthodontists in Chicago in May, 1954, there have been a great deal of talk and much correspondence about the proposed raising of educational requirements for membership in the A. A. O.

Because of the wide background and experience of the editor of the Rocky Mountain Society (in dental organizations over a long period), Sectional Editor Henry Hoffman was asked by the editorial staff to express his views editorially upon this subject. Dr. Hoffman's editorial was delayed, and arrived just in time to be included in the April issue. In the meantime, the editor-in-chief prepared an editorial on this same subject. Inasmuch as the two editorials seem to approach the matter from two different viewpoints, it has been decided to publish both editorials in the same issue. The lead editorial is by Henry Hoffman, editor of the Rocky Mountain Section.

In order that a full and impartial presentation of this subject may be recorded in advance of the meeting in San Francisco, President Fred West suggested that the chairman of the Standing Committee, John Thompson, be asked to record his views on this question. Dr. Thompson very kindly agreed to append his views in a letter to the editor, received just before going to press.

It is thought by the officers of the American Association of Orthodontists that the members should make it a point to secure all available information possible on both sides of this important question before voting in San Francisco in May.

The Function of the American Association of Orthodontists

THE proposal to require a postgraduate certificate in orthodontics from a certified dental college as a prerequisite for membership in the American Association of Orthodontists should be questioned at this time.

On the face of it, this proposal might sound reasonable and perhaps appear to be a step in the right direction, but an analysis of its implications should stimulate pretty thorough investigation by all concerned. I should like to develop three of its phases which would complicate rather than clarify the specialty of orthodontics.

1. The A.A.O. is not a certification body. Certification of qualifications for the practice of orthodontics is the function of the American Board of Orthodontics, an adjunct of the A.A.O. Its purpose is to certify that an orthodontist has given sufficient time, thought, energy, and interest to his work and has demonstrated sufficient technical skill and enduring results to justify the title of "Specialist in Orthodontics."

Even so, certification by the A.B.O. is not required for membership in the A.A.O.

A certificate of having taken a college course in orthodontics is not predicated on the proved accomplishments of an orthodontist. It is, rather, a certificate of proved preparation for his work.

The A.A.O. is, and should be, designed for the advancement and protection of all practitioners of orthodontics who meet the present specifications as to membership and who are acceptable as to their ethical and legal status, without regard to where or how they may have derived their orthodontic education. The principal concern of the A.A.O. is that its members shall serve the community intelligently and honestly.

2. The proponents of this measure claim that it is in the interest of the advancement of orthodontics, that it is calculated to elevate the standards of the profession, and that it is designed to improve the results of treatment. This theory would be more convincing if the schools conducting graduate orthodontic courses offered uniform training, in both theory and practice, which would be generally acceptable to the profession.

If the teaching staffs of the schools were uniformly selected for long experience, ability in technique, and demonstrated results, and if the curricula in the various schools were acceptably standardized, one might consider the proposal as having some merit. Furthermore, any training course in orthodontics is not complete when there is an absence of opportunity for observation of the progress of completed cases over a considerable period of years. Without such experience few men can exercise sound judgement.

It would be fitting for the A.A.O. to devote more of its energy and influence to unifying the orthodontic curricula of dental colleges, for both undergraduates and graduates, and to raising the standard of orthodontic instructors with special emphasis on experience in practice.

3. This proposal, if adopted, would tend to create a division in the ranks of orthodontists because of age, experience, and training. There are not too many orthodontists at present. All orthodontists are supposed to be giving adequate service to the children of their communities. They need the help of the A.A.O. To exclude some of them would be a disservice to children. Some of our finest orthodontists have received their training in the offices of competent orthodontists and will continue to do so.

The fact that we now have schools to provide specialized training is exemplary. It indicates progress and is in keeping with the demands of our time. It should elevate the type of orthodontics far beyond that of the past. It will continue to find methods by which more children may benefit from orthodontics. However, those graduating from schools should not constitute a closed fraternity, excluding men who are just as skilled because of their native ability and their opportunity to have been trained by one man in one office, instead of by one or two men in a classrooom.

Let us not separate orthodontists who are giving good service into two camps. Let us not sanction a system whereby we foster a group within our profession who are imbued with self-imposed delusions of superiority.

Every orthodontist has problems sufficient to keep him humble-minded. Let us keep our minds focused on procedures which will offer help and education to all practicing orthodontists, whoever and wherever they are. This is, and should remain, the chief function of the American Association of Orthodontists.

H. F. H.

Membership Requirements of the American Association of Orthodontists

IN 1953 a resolution was introduced by the Great Lakes Society of Orthodontists to the American Association of Orthodontists which proposed that a standing committee be appointed to study methods of training new orthodontists and to make suggestions to constituent societies which would lead to uniformity of training and the raising of standards of requirements for membership in the constituent societies.

It was provided that the committee be instructed to recommend additions or alterations to the Constitution of the A. A. O., calling for higher requirements for membership from time to time. The committee members appointed by President James Ford were Brooks Bell, Southwestern Section; Alton Moore and George Hahn, Pacific Coast Section; Ashley Howes, Northeastern Section; Faustin Weber, Southern Section; Scott Holmes and Ernest Bach, Great Lakes Section; and John R. Thompson, Central Section (Chairman).

In Chicago last May, members of the committee made both a majority report and a minority report, meaning that the opinion of the committee was not unanimously in favor of the report as written.

At the meeting in San Francisco, the following amendment to the Constitution will be presented for approval or disapproval as a requirement for membership in the A. A. O. The Board of Directors regard the matter of vital importance to the specialty.

> A person who has been in the exclusive practice of orthodontics for at least three years and has successfully completed an orthodontic course of a minimum of 1,500 hours in an approved dental school and is a member in good standing in his local, state, and national dental organizations, may be elected to active membership through the constituent society. He must be recommended by two active members.

If this amendment is passed in San Francisco, it will mean that, subsequent to two years' time, those who have not enjoyed 1,500 hours of special orthodontic study at a university level will not be able to become members of the A. A. O., all other educational requirements notwithstanding. Those who are now members of the Association, of course, would enjoy the same status as the new members, even though the vast majority of the present members do not have 1,500 hours' credit from universities. In legal parlance, and in connection with the practice of medicine, this is called the "grandfather clause," whereby new and strict requirements are adopted but the older mem-

bers are set retroactive "under the tent" and allowed to continue without re-examination of their educational requirements.

There can be no dispute with the proposition of the desire to raise the educational standards of any of the healing arts. However, expediency versus the power of the state to legislate for the health of its citizens is something else, and these forces may come in direct conflict with each other. It is difficult, for instance, always to reconcile science and law. The specialists may want a 1,500-hour graduate minimum requirement, and at the same time any dentist who has a D.D.S. degree and a State Board certificate has the legal right to practice orthodontics and belong to the American Dental Association, his orthodontic training notwithstanding.

Many arguments are being presented both for and against this proposed amendment; however, all arguments seem to focus up two widely divergent viewpoints as to just what are the problems at hand and what is the relative importance of one to the other. Those who support the 1,500-hour amendment say that the specialty of orthodontics has now arrived at the point where formal education, at university level, should be a requirement for membership in A. A. O. They plainly feel that the day is past when requirements should be anything but of the highest level and that orthodontics has grown in stature and should assume its formal educational obligations, for the good of both the specialty and the public.

Orthodontics was the first specialty of dentistry conceived, born, and nursed to adolescence by the private school preceptorship routine. You can create training "yardsticks" and examinations for preceptorship routines for admission to the A. A. O., but to close the door on the practices that created the specialty will not work. The A. A. O. is not ready; nor will the dental profession accept it gracefully at this time.

Incidentally, it is understood that a plan has been offered to the director from the Pacific Coast, outlining a comprehensive educational plan that is designed to constitute an adequate preceptorship plan in orthodontics, and that, no doubt, will be presented to the Board of Directors in San Francisco.

The Cease and Desist Order, No. 6016, issued Nov. 10, 1952, to the American Association of Orthodontists by the United States Federal Trade Commission has never been revoked. If you will reread this directive carefully, you will be impressed by the directives in the order, and it may influence you in making up your mind with regard to what the admission requirements in the A. A. O. should be or should not be.

It is not to be overlooked that the graduate courses in the various universities as yet have not been either approved or disapproved by the Council on Dental Education of the American Dental Association. It is quite possible that some schools will be required to rearrange curricula.

This calls to mind the fact that still another committee was appointed by the A. A. O. to confer with the Council on Dental Education of the A. D. A. in order to secure representation from the specialty of orthodontics to accompany the A. D. A. council when it visits schools to evaluate graduate or postgraduate courses in orthodontics.

At the present time this committee consists of C. Edward Martinek, secretary of the American Board of Orthodontics; William Alstadt, chairman of the Committee on Ethics of the A. A. O.; and Oren A. Oliver, past-president of both the A. A. O. and the A. D. A.

It is understood that this committee held one meeting in conjunction with Dr. Shaler Peterson, secretary of the Council on Dental Education. The first meeting was held in Chicago, Illinois, May 17, 1954. The committee is said to be interested in some semblance at least of educational standardization because of the wide variation in treatment routines which is causing so much "static," particularly in the orthodontic programs of some branches of the Armed Forces wherein one orthodontist is replaced by another. Various kinds of indoctrination and craft briefing obviously have caused much grief in the Armed Services, as well as elsewhere.

The President's private insurance health service plans are plainly on the way. When that time arrives, orthodontists should be able to walk in and take over with any popular technique, taught just the same as a prosthodontist, oral surgeon, or any of the medical specialties.

Orthodontic public relations is tied in with this recommendation of 1,500 hours as an important intangible more than in a purely perfunctory way. Dr. J. A. Salzmann of New York, in an editorial entitled "A Mouthful of Wires," soon to be published in the AMERICAN JOURNAL OF ORTHODONTICS, has this to say in his closing paragraph:

> Orthodontics has an important public relations problem confronting it, not only with the patient, the parents, or the school authorities, but also with the medical profession and last, but of equal importance, with the general practitioner of dentistry.

In a word, high-level educational requirements unquestionably belong in the province of the American Board of Orthodontics. What the long-pull effect of a 1,500-hour university education requirement for membership in the A. A. O., without provision for preceptorship experience admission, would accomplish at this time is entirely speculative. One thing is certain—a situation would be created thereby in which some specialists would qualify as specialists under the laws of their own state, notwithstanding the fact that they could not qualify for membership in the A. A. O., and that would be a very awkward situation to reconcile for anybody.

Obviously, the great majority of members of the A. A. O. are in full accord and believe in strict requirements to qualify for admission to membership. To limit such requirements to the university type of education, however, sans preceptorship of any kind, does not seem to be the answer to the problem at hand. A "slide rule" for the measurement of preceptorship orthodontic training as a requirement for membership has been suggested and outlined, and if this is brought about there will be very little controversy about admission requirements for the American Association of Orthodontists.

H. C. P.

A Letter to the Editor

DEAR DR. POLLOCK:

In your editorial, "Specialists in Dentistry," that appeared in the October, 1954, issue of the JOURNAL, you state: "This discussion, then, will focus attention on the recommendations of the Committee on Admissions for the A.A.O., and will serve a good purpose. It will stimulate discussion on whether the requirements for Admission to the A.A.O. should be limited to the academic type of education only, or include the preceptorship type of preparation which has been long accepted as specialized training." I agree that it has stimulated thought and discussion; however, it was obvious that you favor the continuation of preceptorship training, as you say, "Many say that some of the very best clinical orthodontists in America came up through preceptorship and that this is not the time to discard one of the best methods of specialized training ever found, that is, training under a good clinical practitioner, not without more re-examination at least." As the chairman of the Special Committee on Admissions (automatically dissolved when the report was submitted to the Board of Directors) I am impelled to write this letter favoring the adoption of the amendment.

I wish to assure you that the amendment was evolved by the committee only after many hours of consideration and much correspondence. All letters were duplicated so that all the committee members had copies of one another's correspondence. While it was impossible for the committee to meet in person except at the 1954 A.A.O. meeting, everyone had the opportunity for a full expression of his views. The proceedings at the Board of Directors meetings that led up to the acceptance of the committee report are outlined in President West's article, "Your President Reports" (January, 1955). I emphasize these details only to show that considerable examination has taken place already and that "more re-examination" will always be called for on an important controversial issue. There comes a time when positive action must be taken, rather than appointing additional committees to study the issue.

The issue of the method of training orthodontists is now squarely before the profession and it is time for each member to consider seriously the pros and cons and then cast his ballot.

The report of the Education Committee was published in the December, 1954, issue of the JOURNAL. The committee sent a questionnaire pertaining to academic training in orthodontics to forty-eight dental schools. Of the forty-three questionnaires that were returned, twenty-six schools were offering advanced work leading to a degree or certificate and one offered an advanced program at the undergraduate level. The committee reported that if all the present facilities were filled, 160 to 170 persons would enter the specialty each year. With the introduction of courses in some of the other sixteen schools, this number could be increased considerably.

During the past year 103 new active members were accepted into the constituent societies from April 20, 1953, to May 16, 1954. Certainly there are a

sufficient number of places available for those desiring academic training, provided, of course, that they can meet the entrance requirements of the individual institutions.

As to the nature of the training of current associate members, I can speak only for the Central Section and undoubtedly this would vary from section to section. Dr. Fredrick Lehman, the Central Section secretary, has given me the following information concerning the educational status of our applicants. I shall quote from his letter of September 27:

> In 1953 there were four associate applications. Two of these had certificates, one a degree and one a preceptorship. Among the active applicants of 1953—there was a total of eleven—eight had degrees; one a preceptorship; and three certifications. One of the men of the group had both a degree and a certificate.
>
> For 1954 there is a total of twenty-three associate applicants, of whom seventeen had degrees, six certificates, one a preceptorship, and one had had eighteen months of formal training but received neither a certificate nor a degree. Two in this group had both degrees and certificates. Among the active applicants for 1954 there is a total of eight, of whom four had degrees, two certificates, one a preceptorship, and one twenty-four months' full-time formal training but no degree or certificate.

An argument against the amendment has been advanced by some who say that if it is adopted the entrance requirements for the A.A.O. would be higher than the qualifying requirements for the American Board of Orthodontics. Pertaining to this, I quote from my letter of Sept. 23, 1954, to Dr. Raymond Webster, the Board president.

> You are no doubt acquainted with the action of the Special Committee on Requirements for Admission to the A.A.O. of which I was chairman. You also probably know of the action of the Board of Directors in voting to present the proposed change in the By-Laws recommended by this Committee to the membership for its adoption or rejection. A copy of the amendment is enclosed for your convenience. It has been brought to my attention that an objection to this change has been raised in that the requirements for membership in the A.A.O. would be higher than the eligibility requirements for the A.B.O. If I may, I wish to express to you and the Board my views as chairman, and I am sure that I speak for the majority of the committee members.
>
> It does not seem likely that the Board could change its eligibility requirements in respect to minimum training requirements to eliminate the sections pertaining to training by preceptorship for at least ten years, as it would disqualify some individuals who are already members of the A.A.O. and any persons who would become members in the next three years under the existing requirements for membership in the A.A.O. The real test for Board distinction rests in the rigid examination, exhibit of clinical material, and thesis, and not in qualification for examination. The Association does not have, and never should have, tests for qualification for membership and it is this rigid testing of ability that places the Board in its properly recognized position of distinction.

Copies of this letter were sent to each Board member and the responses indicated that they did not consider this to be a valid objection and that the proposed amendment was in no way contradictory to the spirit and purposes of the Board.

You have stated that the preceptorship type of training should be retained, as it is time tested and many of our fine clinicians (and I can add *teachers*) were trained by this method. I agree that it was a good method of teaching in the era in which it developed and served well when it was the best that was available at that time. The argument is weakened somewhat when we realize that many of our leaders today did not have the benefit of even a preceptorship. This is in no way a reflection on them, but rather it is to their credit that they have pioneered the way in our past fifty years as an organization. The eminent dentist and scientist, Dr. G. V. Black, actually had a total of only nineteen months of formal schooling with no dental school education. He certainly would not advocate a similar educational program for others; rather, he saw the desperate need for dental school education.

The trend in orthodontic training is following the pattern of dental education. Dental education has gradually evolved through preceptorship, proprietary schools, entrance to dental schools directly from high school, and three-year dental school programs, until today the two- or three-year predental and four-year dental program is followed. Not everyone who wishes to be a dentist can obtain entrance to a dental school today. This does not necessarily reflect a shortage of training facilities, but rather it indicates the high caliber of students entering and graduating today.

I wish to quote from some of the committee correspondence in response to the question as to the west way to educate or train an orthodontist. Dr. Faustin Webber stated:

> I do not wish to imply that all preceptor-type instruction is as unsatisfactory as herein described; fortunately some of it is good instruction. In no case, however, is it truly adequate when judged by modern dental educational standards and when the scope of information the present-day orthodontist should possess is considered.
>
> It is inconceivable that any one man—least of all a busy, practicing orthodontist who is to be the preceptor—would have the time, energy, or information to provide instruction in the diversity of subjects that make up the orthodontic curriculum of a graduate course. Universities with their staffs of specialists in the various biologic and clinical sciences are the only places where instruction of the type required can be given. It is my opinion that a preceptorship may augment, but should never support, the formal university training in orthodontics.

Dr. George Hahn stated:

> You have requested suggestions that would lead toward raising the standards of requirements for membership in the A.A.O. I think one recommendation will cover the subject: Do away with the loopholes, such as short courses and preceptorships, and make it mandatory that an applicant for membership shall have completed a graduate or postgraduate course or its legitimate equivalent at a recognized dental college. The so-called preceptorship which, except in rare instances, amounts to

> nothing more than an apprenticeship and not a very good one at that, is as obsolete as the old master and apprentice system of training dentists which was abandoned about the turn of the century.

Dr. Scott Holmes said:

> It is the hope of our organization (Great Lakes Society) that soon there will be an acceptance of the concept that adequate academic training rather than preceptorship will constitute the uniform training required for membership in the A.A.O.

He discussed the issue in more detail in his Great Lakes Society presidential address published in the July, 1954, issue of the JOURNAL.

Dr. Ashley Howes expressed the following opinion:

> In answer to your first question—"Is graduate training in a qualified institute the best method of training orthodontists?" I would respond with a qualified "Yes." I think the best method would be graduate training plus a couple of years spent in the office of an experienced orthodontist. Of course, it is not always possible for every graduate to make such an association, and so graduate training alone becomes the best training available.
>
> I would also answer "Yes" to your second question—"Should graduate training become one of the requisites for the American Association of Orthodontics?" I agree with you that there would have to be two or three years allowed from the time the Association adopts such a resolution to the time that it becomes effective. I believe that graduate programs are, in a large measure, responsible for the advances that are being made in orthodontics, and I believe that this progress will continue if eventually every member of the American Association of Orthodontics will have had the benefit of graduate training. I am not trying to detract from the value of preceptorship. As I stated above, I think it is highly desirable, but it is not a substitute for university graduate training.
>
> As I see it, our aims for the future orthodontist should be graduate training, experience witth a preceptor if possible, increasing his knowledge through membership in the American Association of Orthodontics, and finally acceptance by the American Board of Orthodontics.

Dr. Alton Moore wrote:

> We apparently have reached a place in orthodontic education where we have adequate facilities for the training of anyone interested in entering the orthodontic profession. In view of this fact, I feel that the time has come for the American Association of Orthodontists to make it mandatory that applicants for membership shall have completed graduate or postgraduate courses, or their legitimate equivalent, at a recognized school of dentistry. This, of course, would cover the program (undergraduate) that is practiced at the University of California.

The Great Lakes Society already is on record favoring academic training as a requirement for membership in the A.A.O. in that it was included at one time in their constitution. They were forced to rescind this action, since the requirements for membership would have been higher than those for the A.A.O. The Southern Section of the Pacific Coast Society and the Central Section of the A.A.O. have both passed resolutions "favoring an amendment or

addition to the constitution of the American Association of Orthodontists that will lead toward uniformity of training of all orthodontists and will raise the standards of requirements for membership in the component societies."

Finally, a word on the nature of academic training. For some reason or other, in many minds "academic training" and "theory" are considered to be synonymous terms, just as are "preceptorship" and "practical." By no means is academic training mainly theoretical, as there is a great deal of the "doing" as well as learning the "know-how" and "why." Universities attempt to develop a balance of training in basic science, clinical science, technique, and clinical practice. Many more hours are spent in the orthodontic clinics treating cases than in seminars, lectures, and basic science laboratories. Usually the clinical teachers are engaged in private practice and very often may have different ideas as to their methods of practice. The student, then, benefits by the clinical experiences of more than one person.

Adoption of the amendment would carry with it an increase in obligation for the universities. They should respond by increasing their present facilities for graduate, postgraduate, or equivalent undergraduate training. Programs should be started in those institutions where they do not now exist. Finally, they should expand the program of short courses to supplement the training for all orthodontists, but not to be used as a substitute for basic academic training.

I have tried to present the views of those who favor the adoption of the proposed amendment as fairly as possible. As I said earlier, the issue is now squarely before the profession for the sincere expression of its members' desires at the Tuesday morning business meeting of the San Francisco meeting. Do we move forward and clearly settle the issue as to who is a "specialist," or do we continue to discuss and debate the issue?

If there is any "tail wagging a dog" or vice versa, it is the moral obligation to the public to produce the best practitioners possible for the treatment of their children.

Very sincerely yours,

JOHN R. THOMPSON.

In Memoriam

W. ROBERT MAC CONKEY

1911-1954

MEMBERS of the Great Lakes Society of Orthodontists were stunned recently by the sudden death of their fellow member, W. Robert MacConkey of Rochester, New York. While visiting his family in Cambridge, Ohio, Dr. MacConkey suffered a heart attack and died on Oct. 25, 1954.

W. Robert MacConkey was born in Norfolk, Virginia, Jan. 22, 1911, the son of Judge S. F. MacConkey and the late Elizabeth Kaetz MacConkey. Later the family moved to Columbus, Ohio, and from there to Cambridge, Ohio.

Dr. MacConkey received a B.A. degree from Ohio State University in 1932 and his dental degree from the same school in 1937.

Following his graduation, Dr. MacConkey married Margaret Headley and went to Rochester to intern at the Eastman Dental Dispensary under the direction of the late Dr. Eda B. Schlenker, orthodontist. Later he became associated in private practice with Dr. Schlenker. In 1944, Dr. MacConkey was commissioned in the Navy Dental Corps, and after his separation in 1946 he again entered the private practice of orthodontics.

Dr. MacConkey was a member of Psi Omega fraternity, Rochester Dental Society, Brighton Kiwanis Club, the Rochester Club, and the Presbyterian Church.

He was modest and conscientious, and sincerely loved his work. His patients thought so highly of him that they had a commemorative plaque made, to be placed on the building in Brighton where he practiced. It is a great tribute to a wonderful person.

Dr. MacConkey leaves his wife, Margaret, and two young sons, Robert, Jr., and John Charles. To these, we of the Great Lakes Society of Orthodontists give our heartfelt sympathy.

Robert E. Ross, Chairman
Necrology Committee

DAVID T. B. HOUSTON

DAVID T. B. HOUSTON, retired orthodontist, died recently at his home in Paterson, New Jersey, following a long illness. He was 71 years old.

Following his graduation from the University of Maryland in 1912, Dr. Houston practiced for many years in Montclair, New Jersey, where he established a dental clinic for underprivileged children at Mountainside Hospital. He was a charter member of Mountain Lodge 214, F. & A. M., a 50-year member of the Elks, and a member of the Upper Montclair Country Club.

Dr. Houston is survived by his wife and one sister.

Department of Orthodontic Abstracts and Reviews

Edited by

DR. J. A. SALZMANN, NEW YORK CITY

All communications concerning further information about abstracted material and the acceptance of articles or books for consideration in this department should be addressed to Dr. J. A. Salzmann, 654 Madison Avenue, New York City

Abstracts Presented Before the Research Section of the American Association of Orthodontists, Chicago, May 19, 1954

Early Tissue Changes Following Tooth Movement in the Laboratory Rat at Varying Periods of Time After the Application of Stress: By Peter K. J. Yen and Julian M. Rothblatt, Harvard School of Dental Medicine, Boston, Mass.

Using the method reported by Waldo and Rothblatt (*J. D. Res.* **32**: 678, 690, 1953), segments of No. 5 orthodontic intermaxillary elastics were placed between the maxillary right first and second molar teeth of young male albino rats, and the reaction to stress studied histologically after four, six, eight, sixteen, twenty, and twenty-four hours, respectively. Maxillary left quadrants served as controls. After four hours, the width of the periodontal membrane was reduced, due to pressure on the second molar roots. Earliest cellular changes occurred after six hours, with necrosis of the interdental papilla under the rubber segment, hemorrhage in areas of pressure, the appearance of osteoclasts with accompanying resorption in both the interseptal and interradicular bone, and early suggestions of new bone formation in regions of tension. By eight hours, the response was intensified and some undermining resorption could be seen in the marrow spaces of the interseptal bone beneath the rubber band. At sixteen hours, there was moderate hyperemia of the pulp and slight vasodilation of intraosseous vessels in areas of tension. Marked enlargement and congestion of the pulpal blood vessels, with suggestive vacuolization of the odontoblasts in the mesial root of the first molar, were apparent at twenty hours, and cellular changes around the first and second molar teeth continued to increase in extent, although the third molar tooth was as yet unaffected visibly by the stress. The twenty-four hour sections showed a rather characteristic reaction to stress: cellular infiltration in tension zones prior to active deposition, marked variations in the width of the periodontal membrane, bone resorption distal to both the second and third molar teeth, and tipping of the molars away from the site of stress. Previous studies have described changes accompanying longer term stress periods up to five days, and this study shows the remarkable rapidity with which early tissue responses may accompany tooth movement in the laboratory rat.

Extra-Alveolar Cephalometric Appraisal During Treatment; a New Approach (Read by Title): By Thomas J. Watson, D.M.D., Washington University, St. Louis, Mo.

A modified tracing technique was developed, using graph paper to aid in orienting serial tracings with greater precision and also to provide a more simple means of quantifying the different points of the craniofacial complex.

This method allows quantification in terms of ratios, obviating the need for the usual angle or absolute measurements. Profile outlines, such as the nasal floor or posterior and lower borders of the mandible, that do not present definite points for use may be compared by the use of straight lines or tangents.

This method was used to appraise extra-alveolar changes occurring during treatment of a series of twenty cases of posterio-occlusion. The elapsed treatment time studied ranged in individual cases from four months to twenty-four months, with an age range of 8 to 14 years from beginning of treatment.

Results.—

1. The most consistent change was noticed in the behavior of the nasal floor. In fifteen cases, tangents or straight lines along the nasal floor formed an angle opening anteriorly and downward on the last film studied. This is contrary to the parallel descent of both ends of the nasal floor, as noticed in untreated cases by other investigators. The nasal floor in the remaining cases displayed parallel descent or no change.

2. Anterior nasal spine and point "a" tended to co-vary with the formation of this angle going downward, or downward and backward. In only one of the fifteen cases where the angle formed did these points go downward and forward in profile.

3. The lower point of the pterygomaxillary fissure was difficult to pick up with precision, but in some cases was observed to go backward with the formation of the angle.

4. This apparent tipping effect of the nasal floor as seen in profile may be characteristic in the correction of posterio-occlusion, depending on the degree of apical base dysplasia of the maxilla and mandible.

News and Notes

American Association of Orthodontists

FELLOW MEMBERS:

We are proud to present to you the complete program of the subjects and essayists to be featured at our 51st Annual Session in San Francisco on May 8 to 12, 1955.

We believe you will agree that Program Chairman George Hahn has selected material of vital interest to all of us and "a galaxy of stars" who are unquestionably leaders in their fields. Here they are:

Changing Facial Form, Spencer R. Atkinson.

The Versatility of the Edge-wise Mechanism, Wendell L. Wylie, Director; Robert B. Murray; Eugene E. West, and William W. Paden.

Bolton Standards in Diagnosis and Treatment, B. Holly Broadbent.

The Rates of Growth of Several Facial Components Measured From the Serial Cephalometric Roentgenograms, Ram Sarup Nanda.

Analysis of Dentofacial Profile, William B. Downs.

The Frankfort-Mandibular Incisor Angle (FMIA) in Orthodontic Diagnosis, Treatment Planning, and Prognosis, Charles H. Tweed.

Inadequacy of Mandibular Anchorage, Stephen C. Hopkins.

A Critical Analysis of the Use of Cervical Traction in Orthodontics—100 Treated Cases, T. M. Graber.

Dental-Facial Growth and Development in Children Receiving Fluoridated and Non-fluoridated Drinking Water, J. A. Salzmann.

Cleft Palate Symposium, John R. Thompson, Moderator; oral surgeon, Wayne B. Slaughter, M.D.; speech, Harold Westlake, Ph.D.; orthodontist, Kenneth F. Terwilliger.

The Scientific Research Section should command our attention. The twenty-six dental schools presenting a graduate orthodontic curriculum are the source of supply for the material presented at this meeting.

The Prize Winning Essay to be read is the result of scientific research. The young men and faculty members who are engaged in this time-consuming activity on subjects as varied as the mind can conceive are worthy of our attention. It is here that we hear the results of their thinking, experimentation, and discussion. The progress of orthodontics depends upon the fruits of their labors.

ROUND-TABLE LUNCHEON

Topics	*Leaders*
Cleft Palate	Wayne F. Slaughter
	Kenneth Terwilliger
	Harold Westlake
Downs Analysis	William B. Downs
	Alton W. Moore
	William A. Elsasser

Steiner Method of Cephalometric Appraisal	Wendell L. Wylie Reed A. Holdaway Jack R. Smithers
Occipital Anchorage	Silas J. Kloehn Ernest L. Johnson William E. Grenfell Carl F. Bruggeman Earl R. Crane Herbert V. Muchnic
Johnson Twin Arch	Joseph E. Johnson Leigh C. Fairbank James W. Ford
Edgewise Arch Mechanism	Robert B. Murray William W. Paden Eugene E. West
Cephalometric Equipment	William S. Smith James D. McCoy T. M. Graber
Habits	Clifford L. Whitman Jesse A. Linn Spencer R. Atkinson
Faces	Clarence W. Carey Emery J. Fraser Glendon H. Terwilliger

LIMITED ATTENDANCE CLINICS (RICHARD M. RAILSBACK, CHAIRMAN)

Attention: The meeting at San Francisco is going to feature a series of limited attendance clinics by outstanding clinicians. As attendance is strictly limited, admission will be by ticket only. In order to assure yourself of a ticket, be sure to return your selection as soon as possible. The following is a list of those clinics from which you may select the one you prefer to attend.

Lyall O. Bishop. Oral Surgical Procedures in the Treatment of Malocclusions.

Clarence W. Carey. Laminated Arches—Double Ribbon and Double Edgewise.

B. F. Dewel. Serial Extraction in Orthodontics—Early Recognition and Treatment of Dento-Facial Deficiencies.

Gordon M. Fitzgerald. Roentgenologic Localization—Technics and Interpretations.

Albert C. Heimlich. Equilibration in Orthodontics—Treatment Refined by Selective Grinding.

Joseph E. Johnson. The Treatment of Different Types of Malocclusion Using the Twin-Wire Mechanism.

Charles H. Tweed. Diagnosis, Treatment Planning, and Prognosis of Malocclusion Occurring in the Mixed Dentition.

Clifford L. Whitman. The 1955 version of "Habits Have Gotten to Be a Habit With Me."

TABLE CLINICS

Clinicians	*Title*
1. David B. Ast	State Aid Orthodontic Care in the State of New York
2. Earl W. Renfroe	Anchorage
3. Frederick B. Lehman	A Simplified Means of Standardizing Your Photography
4. Los Angeles Orthopaedic Hospital Department	Exhibit of the Los Angeles Orthopaedic Hospital Department of Dento-Facial Orthopaedics
5. Harold E. Leslie	Successful Treatment of Impacted Cuspids

6. Denton J. Rees	A Simplified Method of Model Analysis as an Adjunct to Treatment Planning
7. D. H. Jenkins	Analysis of Orthodontic Deformity Employing Lateral Cephalostatic Radiography
8. L. W. Robinson	Traumatic Occlusion and Its Prevention
9. J. Rodney Mathews	An Effective and Expensive Way to Have Bubble-Free Plaster
10. Arnold Wieser	Soldering on Stainless Steel
11. William Elsasser	Coordinate Method of Cephalometric Appraisal
12. John H. Parker	Retainer Repairs
13. George H. Grover and John H. Parker	Cementation
14. Edward A. Cheney	Facial Form Analysis
15. J. Clifford Willcox	The Gnathostat Symmetrograph and Diagnostic Set-Up, in Treatment and Diagnosis
16. Robert A. Lee	Cases Involving Tooth Reduction Using the Universal Appliance
17. Robert J. Gawley and Joseph Hyman	The Universal Appliance as Used in Our Office
18. Robert R. McConagle	An Orthodontic Success
19. Walter Mosman	Occipital Anchorage—Diagnosis and Treatment
20. Pacific Northwest Orthodontic Study Club	
George A. Barker and Howard J. Hammond	Prefabrication to Save Chair Time
Aldys J. Gray and Arnold E. Stoller	Buccal Bars—Types and Uses
Donald C. MacEwan and Arthur F. Skaife	Spring Buccal Bars—Fabrication and Use
Elwood B. Faxon and James M. Keenan	Removing Stresses From Cold-Worked Wire
Lloyd Chapman	A Swagger for Plastic Appliances
Richard Cline and Joseph E. Harrison	Uses of 90° Twists in Flat Wire
Vincent K. Davis and Thurman L. Hice	Coil Spring—Fabrication and Use
Ralph G. Cooper and John P. MacKinnon	Coil Spring—Fabrication and Use (additional)
Henry H. Bowman and Paul Husted	The "Twiniversal" Appliance
Benjamin E. Nickells	Simple Accessories in Universal Bracket Technique
21. Spencer R. Atkinson and Group	
Ted Gettinger Raymond L. Cullen Sakae K. Tanaka Abraham A. Swerdlow Robert G. Daniel Joseph F. Rose Clarence D. Honig Donald L. Snedaker William S. Saltz	Changing Facial Form

22. Frank S. Ryan	Cephalometric Radiographic Analysis of Dento-Facial Disharmonies
Robert W. Donovan	Typodont Exhibit of Edgewise Arch Appliance Therapy
Vernon R. Boman	Exhibit of Cases Treated in the Graduate Clinic of Northwestern University Illustrating Various Problems

Don't forget the big program of entertainment and recreation we have planned for you:
Golden Anniversary Luncheon.
"Get-Acquainted" dinner for members and ladies.
Round-Table Luncheon.
President's Reception, dinner, and floor show.
Golf.
Sightseeing and photographic bus tour of San Francisco for members and ladies.
For the ladies:
Complimentary Continental breakfasts on two days.
Conducted Tour of world-famous Gump's Oriental Shop.
Luncheon and fashion show.
We're expecting you.

Reuben L. Blake, General Chairman.

Johnson Alumni Club

The Johnson Alumni Club meeting was held at the Brown Hotel in Louisville, Kentucky, Jan. 31, and Feb. 1 and 2, 1955. Dr. Johnson appeared on the program Monday, Tuesday, and Wednesday. There was a symposium and the participants were Earl C. Bean and Leo B. Lundergan, St. Louis, Missouri, and William F. Ford, Winnetka, Illinois. A case report was presented by T. N. Engdahl of San Jose, California. A paper was presented by Leigh C. Fairbank, Washington, D. C., entitled "Our Orthodontic Heritage—But What for Tomorrow." There also were eighteen table clinics presented at the evening session on Monday. The total attendance was 301, including two from Venezuela, one from Puerto Rico, one from Cuba, one from Mexico, and one from Canada. At the business meeting the officers were all re-elected for another term. Earl E. Shepard of St. Louis, Missouri, was re-elected chairman and Cecil G. Muller of Omaha, Nebraska, was re-elected secretary.

American Association for Cleft Palate Rehabilitation

The American Association for Cleft Palate Rehabilitation will hold its annual meeting May 13 and 14, 1955, in Boston, Mass.

Notes of Interest

Harry Carlson, D.D.S., M.S., takes pleasure in announcing that Ernest Myer, D.D.S., M.S., formerly of Chicago, is now associated with him in the practice of orthodontics at 347 Medico-Dental Bldg., Sacramento, California.

Thorwald Eros, Jr., D.D.S., M.D.S., announces the removal of his office to Suite 821, Strickler Bldg., 1293 Peachtree St., N. E., Atlanta, Georgia, practice limited to orthodontics.

Robert P. Posner, D.D.S., announces his return from active duty with the United States Air Force, and will resume his practice of orthodontics at the Midway Theatre Bldg., 108-22 Queens Blvd., Forest Hills, New York.

Drs. Denton J. Rees, Guy A. Woods, Jr., and Eugene F. Butori announce the opening of their new offices, second floor, Professional Bldg., S.W. 11th at Yamhill St., Portland 5, Oregon, practice limited to orthodontics.

Milton Stern, B.S., D.D.S., announces the opening of his office at 3051 Delaware Ave., Kenmore 17, New York, practice limited to orthodontics.

OFFICERS OF ORTHODONTIC SOCIETIES

THE AMERICAN JOURNAL OF ORTHODONTICS is the official publication of the American Association of Orthodontists and the following component societies. The editorial board of the AMERICAN JOURNAL OF ORTHODONTICS is composed of a representative of each one of the component societies of the American Association of Orthodontists.

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President, Frederick T. West - - - - - - - - 760 Market St., San Francisco, Calif.
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Vice-President, George H. Herbert - - - - - - - - 7002 Pershing Ave., St. Louis, Mo.
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President, Carl R. Anderson - - - - - - - - 402 Loraine Bldg., Grand Rapids, Mich.
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Treasurer, George S. Harris - - - - - - - - - 18520 Grand River, Detroit, Mich.

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Pacific Coast Society of Orthodontists

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President, Walter K. Appel - - - - - - - - - 4018 Moore Ave., Cheyenne, Wyo.
Secretary-Treasurer, Howard L. Wilson - - - - - - - Republic Bldg., Denver, Colo.

Southern Society of Orthodontists

President, Olin W. Owen - - - - - - - - - 1201 East Morehead St., Charlotte, N. C.
Secretary-Treasurer, M. D. Edwards - - - - - - 132 Adams St., Montgomery, Ala.

Southwestern Society of Orthodontists

President, J. Victor Benton - - - - - 1206 Union Nat'l Bank Bldg., Wichita, Kan.
Secretary-Treasurer, Harold S. Born - - - - - - - 908 Johnston, Bartlesville, Okla.

American Board of Orthodontics

President, Raymond L. Webster - - - - - - - 133 Waterman St., Providence, R. I.
Vice-President, Ernest L. Johnson - - - - - - - 450 Sutter St., San Francisco, Calif.
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Treasurer, Lowrie J. Porter - - - - - - - - 41 East 57th St., New York, N. Y.
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Director, L. Bodine Higley - - - - - University of North Carolina, Chapel Hill, N. C.
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There is an apparent discrepanc

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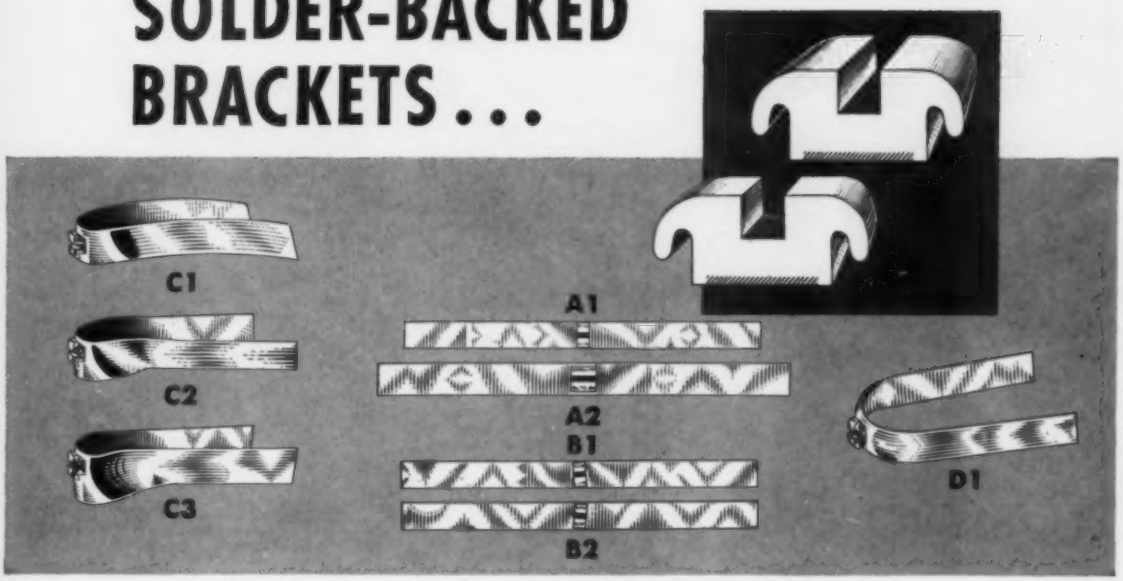

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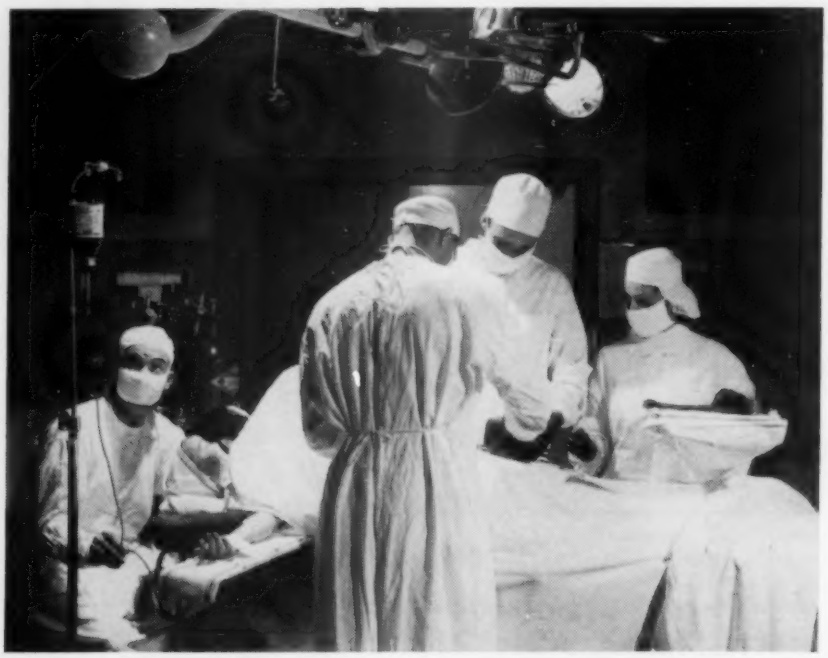

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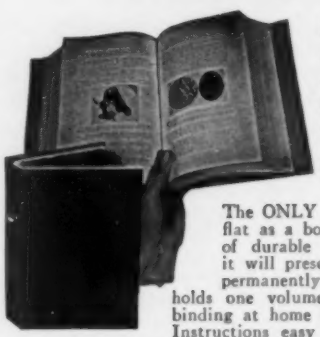

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Published Monthly. Subscriptions may begin at any time.

Official Publication of The American Association of Orthodontists,
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